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The JOURNAL Of The
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XLV OKLAHOMA CITY, OKLAHOMA, JANUARY, 1952 NUMBER 1

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THE JOURNAL
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EDITORIALS

INFECTIOUS MONONUCLEOSIS

Though not a new disease infectious mononucleosis has been reported under so many different names since Pieffer first described it under the term "Drusenfieber" in 1889 there is room for some confusion about the condition especially in the minds of general practitioners. The prominence which the condition has assumed, because of more careful diagnostic scrutiny and possibly because of increased prevalence makes it obligatory for the family medical advisor to be informed and ready to make the diagnosis and to meet the lay inquiries about the disease which of late has been diagnosed and freely discussed among relatives and friends and occasionally handed on with the cocktail and not infrequently at formal dinners where doctors may gather.

Such favored physicians if well informed may promptly enlighten all who are intrigued by the tempting lure of medical gossip, if they quote Musser's definition of the disease, "an acute contagious disease of the reticulo-endothelial system characterized by glandular enlargement, fever, hepatomegaly, splenomegaly, increase of the mononuclear cells and symptoms of constitutional debilitation".

Seriously speaking, a working and talking knowledge of the condition is of increasing importance to the people and the medical profession.

While in the brief space allotted editorials, it is impossible to convey an adequate impression of the varied clinical manifestations of this relatively benign condition with its multiple complications and its widespread and varied pathological manifestations, it seems pertinent to urge all physicians not already armed with the main diagnostic, pathologic, therapeutic and prognostic facts to look up the latest authorities, replenish the stockpile and be ready to "pass the ammunition".

PHYSICIAN HEAL THYSELF

Physicians who advise periodic health examinations should practice what they preach. Statistical studies show that the annual death rate of physicians is considerably higher than that of the general population. This alone should cause physicians to become interested in their own health.

As far as can be determined through available sources of information in Oklahoma there has been no concerted effort to determine why physicians have a higher mortality rate than other people. Neither has there been any obvious plan for uniform check up to determine the individual physician's state of health and to chart his future according to his physical competency, or, in other words, instituting stop gaps and safeguards with a view of preventing illness and prolonging life. While advocating the production of more doctors would it not be wise to institute plans for the prolongation of life among those already in practice.

Is not this a problem for consideration by the council of the State Medical Association? Perhaps the State Association could devise ways and means to provide diagnostic studies and advice similar to that often made available to employes in industry and to individual patients by their physicians. In other words, a service for physicians the equal of that advised for their patients and friends.

LOOKING BACK
THE PUBLIC HEALTH SERVICE AND ENVIRONMENTAL HEALTH

The Public Health Service has announced a book on "Environment and Health"[1]—the first to deal comprehensively with this theme.

"Airs, Waters and Places" was perhaps Hippocrates' greatest work. It is interesting to note that 2400 years before Public Health Service gets around to the task of making available its first publication on environment and health, Hippocrates wrote with great intelligence for his time, on the locality, the season, the water, the atmosphere and the winds. He discussed environment and its effects in great detail, citing the people of different races and widely separated localities as examples. It is astonishing how much he knew and how many of his concepts naturally slip into modern medical thinking.

1. Available at the Government Printing Office, Washington, D. C., at 75 cents per copy.

A WARNING

Unfavorable effects of cortisone and ACTH in cases suffering from tuberculosis in the literature and the reports of the Veterans Administration conference on chemotherapy in tuberculosis, there is cumulative evidence, both clinical and experimental (in the laboratory) that the administration of cortisone and ACTH tends to re-activate latent tuberculosis and to cause exacerbations of active tuberculosis regardless of the stage of the disease or the degree of activity. This danger should be kept in mind and patients should have a thorough examination to determine the presence or absence of tuberculosis anywhere in the body before these therapeutic agents are employed. Patients receiving cortisone or ACTH should be carefully watched for symptoms and signs developing in lesions not discovered by previous examinations.

HOW GREAT, HOW VULNERABLE, HOW SMALL, HOW SELFISH ARE THE GREAT

In the last quarter of the 19th Century Frederick III, married to the daughter of Queen Victoria of England, father of Kaiser Wilhelm II of Germany, developed a hoarseness after an attack of measles. Being unable to shake off the persistent hoarseness and an annoying cough, Professor Gerhardt, the laryngologist examined his throat and discovered an excresence on the left vocal cord. An unsuccessful attempt to remove the new growth was followed by a series of cauterizations. The growth apparently disappeared and the treatment was considered satisfactory. A few weeks later the growth recurred and was found to be larger than before cauterization. Cancer of the larynx was suspected and Professor Von Bergmann of Berlin was called in consultation. It was agreed that the growth was malignant and removal of the larynx advised. Because of the royal position of the patient and the risk involved, the famous English laryngologist Morell Mackenzie was consulted. After examination he refused to concur without a biopsy. Rudolph Virchow, the father of cellular pathology, examined the fragments of tissue and reported no evidence of malignancy. The attending physicians were discredited and Mackenzie took charge of the case. Because of the favorable diagnosis, Mackenzie was idealized, knighted and decorated with the Grand Cross of the Hohenzollern Order.

Two or three months later Mackenzie found that the growth had taken an unfavorable turn with a "distinctly malignant look". All the physicians formerly connected with the case were called and it was agreed that the larynx should be removed but operation was declined. Breathing became more difficult and finally life was prolonged by tracheotomy. On June 15, 1888, approximately two years and three months after his German physician had diagnosed his case and only three months after he ascended the throne, the Emperor Frederick III died of bronchi-pulmonary infection associated with cancer of the larynx.

Since Frederick III apparently was more conservative and less ambitious than his son, the late Kaiser, one wonders what might have been the course of history if laryngectomy had been performed when first advised and he had lived to rule Germany through the first two decades of the 20th Century.

It is interesting to note that Virchow disclaimed responsibility because he could not be held responsible if the specimen did not contain the cancer cells and Mackenzie claimed the growth had taken on malignant characteristics after his first examination.

Though the element of error in such procedures has been greatly reduced, such mistakes are still possible. In this connection it should be observed that experience in social and professional relations suggest that favorable progress in human nature is lagging far behind that exhibited in the field of science.

THE SO-CALLED SAFETY BELT

In a Paris to London flight of British European Airways a Viking plane crashed at the London airport October 31, 1950. Twenty-eight of the 30 occupants were killed.

In the *British Medical Journal* Donald Teare, M.D.[1] has reported on the post-mortem examinations of the 28 victims. Since this is relatively a new field for the pathologist and of great interest to all physicians, the causes of death are reproduced as listed: fractured skull, 10; fractured cervical spine, 1; traumatic subarachnoid hemorrhage, 1; ruptured aorta, 8; ruptured lungs, 3; ruptured heart, 3; and ruptured liver and spleen, 2.

The author says, "it would appear that had no fire occurred the fate of the occupants would have been the same."

The author saw only three other cases of rupture of the aorta in 2,500 autopsies, one in the radio operator of the Dakota which crashed at Mill Hill and two due to traffic accidents. This intriguing subject is well

defined in these paragraphs lifted from Doctor Teare's discussion:

"The ruptures of the aorta were associated with fractures of the ribs, disruption of the intercostal muscles, fractures of the spine, or laceration and bruising of the surface of the liver. These injuries were, in my opinion, caused by acute flexion of the body over the safety-belt. A similar mechanism could well have accounted for the findings in the eight who died from laceration of the heart, lungs, or liver and spleen. It would also appear that had these travellers been seated with their backs 'to the engine' and supported by cushioned upholstery these particular types of injury might have been avoided.

"It is clearly of little consolation to escape a sudden death only to die in a conflagation, but not all crashed aircraft catch fire, and presumably with advances in foam-protected petrol tanks the danger of fire will diminish."

Until our seats are reversed and supplied with heavy upholstering, a *Women's Home Companion*, a *Saturday Evening Post* or better, a copy of *Fortune* between the passenger's abdomen and his so-called safety belt may break the shock and offer the passenger a chance to escape the fire.

What can be said of speed, that surpasses man's physiological limitations and poses so many difficult problems in equally as many scientific realms yet inadequately explored? It appears that the engineer has thrown us out of gear.

1. Post-Mortem Examinations on Air-Crash Victims, Donald Teare, M.D., M.R.C.P., *Brit. Med. Assn. J.* No. 4733: 707-8 (September 22) 1951.

FOR THE NEW YEAR

I recommend the philosophy of life expressed by Sir William Osler in his three ideals:

"I have three personal ideals. One is to do the day's work well and not bother about tomorrow. The second ideal is to act the Golden Rule, as far as in me lay, towards my professional brethren and towards the patients committed to my care. The third has been to cultivate such a measure of equanimity as would enable me to hear success with humility, the affection of my friends without pride, and be ready when the day of sorrow and grief came to meet it with the courage befitting a man."

MEDUCATION

By accident, Dr. R. C. Baker, editor of one of the best county medical society bulletins in the state coined the following significant word. Doctor Baker wrote an editorial about the recommitment of Senate Bill 337 to the Senate Labor and Public Welfare Committee. He sent the editorial to press supposedly under the following title, "Federal Aid to Medical Education Bill Gets Set-Back." When the Bulletin came out he was surprised to find the following title, "Federal Aid to Meducation Bill Gets Set-Back." The word, never heard of before, has been filed by the publishers of Webster's New International Dictionary and will be included in the next edition if its usage warrants. In these days of increasing demands, a short cut to medical education is greatly to be desired. At any rate the Journal congratulates Doctor Baker, the versatile editor of the *Bulletin* of the Garfield-Kingfisher County Medical Society.

In the magnificent book entitled *On the Physician* there are various observations which on account of their freshness, vitality, and correctness deserve to be read and considered even today. "For the physician it is unquestionably an important point to have a fine appearance and to be well nourished, because the public believes that those who do not know how to take care of their own bodies are not in a position to think about the care of others. He should know how to be silent at the proper moment and should conduct a regular life, because this contributes much to his good reputation. His behaviour should be that of an honest man and as such he should appear gentle and tolerant before honest men. He should not act impulsively nor precipitately; he should maintain a calm and serene visage and should never be in a bad humour, but on the other hand should not appear too gay."—*History of Medicine* (by Castiglioni) page 157.

TOO LATE HE DISCOVERED THIS

"You cannot trust the battle of freedom to socialism. Socialism has no interest in liberty. Socialism is the negation of liberty. Socialism means the community in bonds. If you establish a Socialist community it means the most comprehensive, universal and pervasive tyranny that this country has ever seen. It is like the sand of the desert. It gets into your food, your clothes, your machinery, the very air you breathe. They are all gritty and regulations , orders, decrees, rules. That is what socialism means."—*Lloyd George.*

SCIENTIFIC ARTICLES

PENETRATING ABDOMINAL INJURIES*

CHARLES M. O'LEARY, M.D.
OKLAHOMA CITY, OKLAHOMA

INTRODUCTION

Penetrating abdominal injuries during the civil war were associated with the appalling mortality of 90 per cent. Despite the remarkable development of abdominal surgery and adjuvant therapy, the mortality during the last world war was approximately 40 per cent. The quickening pace of mass destruction has voided many of the benefits of modern surgical knowledge. The victim of the modern bomb not only becomes the recipient of the intrinsic component parts of the shell, but is subject to fragmentation of anything that is in the path of the explosion.

To a lesser degree the management of penetrating injuries in the civilian population constitutes an ever increasing problem. It is the intent of the author to discuss some of these factors which contribute to a more successful management.

INDICATIONS FOR SURGERY

With certain exceptions, penetrating wounds of the abdomen should be explored as soon as the condition of the patient permits. Needless to say, a patient who is morabund and dying will receive no serious consideration for surgical intervention. The exceptions to operative intervention that will receive further discussion are small stab wounds, shotgun wounds at a distance and a patient recovering from a penetrating wound of more than 36 hours duration. With temerity the surgeon may pursue a conservative management in small stab wounds of the liver, kidney or empty stomach. Granted the ideal circumstances of the injury of the listed organs by an object such as an ice pick, recovery may occur without exploration. However, with a full stomach, concomitant bowel damage, or spleen laceration, a mortality may be exexpected. Wangensteen has shown in experimental animals that if the stomach is empty, wounds up to 1 cm in length are tolerated without mortality, so that under certain circumstances recovery may be expected even following small stab wounds of this organ. In penetrating injuries of the upper stomach or esophageal gastric junction the surgeon must evaluate the danger of the injury as opposed to the hazard of thoraco abdominal approach.

Close range shotgun wounds are often hopeless. Patients who survive to be considered for surgery, frequently have irreparable soft tissue and visceral damage. Shotgun wounds fired at a distance producing multiple perforations of the abdominal wall incur comparable pathology of the viscera. It is not feasible nor proper to attempt by laparotomy to close hundreds of perforations. These perforations are so small that spontaneous closure occurs, if not traumatized by a surgical procedure. Surgical intervention will produce extrusion of feculent material with concomitent peritonitis. Adjuvant therapy is institute. The patient is observed for development of localized abcesses, secondary hemorrhage or frank perforation and treated for these complications. Willis, Myer, Counseller and others have contributed to this axiom.

Conservative management is proper in a patient obviously recovering from a penetrating wound of more than 36 hours duration. Such a patient usually has neither a bowel perforation nor continuing internal hemorrhage.

THE PENERATING AGENT

The destructive effect of close range shotgun wounds has been stated. The innumerable secondary projectiles from explosion, the caliber, velocity and jacketing of bullets are important. Number 22s are relatively benign; 38s and 45s often require resection due to traumatizing and explosive effect. Stab wounds that penetrate the peritoneal cavity may not injure viscera. Martin failed to find visceral injury in 31 of 37 cases of stab wounds in his series. The average mortality of stab wounds is approximately one-third of the bullet wounds. Pronounced

* Presented before the General Session at the Annual Meeting of the Oklahoma State Medical Association, May 23, 1951.

eviscerations often present very little shock and have uneventful recoveries. The most virulent infections follow the assailants' practice of spitting on the blade before plunging it in. For this reason abdominal wall tissue should not be closed tightly.

DIRECTIONAL COURSE OF PENETRATING WOUNDS

In most instances of bullet wounds the straight line rule is of considerable value. The correct interpretation of this rule is predicated upon the presence of a wound of entrance and exit or the presence of a palpable spent bullet in the subcutaneous tissue. However the supine position of the patient on the operating table probably was not the position of the patient at the time of the wound. The shift of mobile viscera with change of the position of the patient must be recalled. In the abscence of a wound of exit a study of a wound of entrance indicates at least the initial direction of the missile prior to deflection by bony parts. A concentric area of abrasion and contusion indicates the course to be penetrating visceral structures. If the area of abrasion is to the right of the edge of the wound it signifies that the missile has passed from right to left. The degree of undermining beneath the edge of the wound opposite the area of abrasion may indicate the obliquity of the course of the bullet. Since a spent bullet may fall away from its prior pathway, the position of a retained bullet in the roentgenogram should be used with caution to predict the visceral injury. The bizzare course of projectiles is due more often to the position of the patient at the time of the injury than to deviation or deflection by bony structures.

All penerating wounds which cause visceral injuries do not occur in the anterior abdominal wall. Sir Gordon Taylor reports that in only 60 per cent of the intra abdominal injuries seen in England during world war II was the wound of entrance in the anterior abdominal wall. In 20 per cent it had been in the back, while in the other 20 per cent the wound of entrance occurred in the buttocks. In the buttock wounds, richochet of the bullet is more prone to occur. Since half of the ribs cover the abdomen all penetrating wounds below the fifth ribs should be viewed as the possible source of abdominal perforations.

FACTORS DETERMINING PROGNOSIS

The prognosis depends upon four factors listed in decreasing degree of importance. These factors are the extent and type of visceral damage, the experience and judgment of the surgeon, the time between injury and treatment and the degree of hemorrhage. The variation in extent of visceral damage dependent upon the penetrating object has been discussed. Penerating injuries of the diaphgram, liver, stomach and pancreas, large vessels and the colon are accompanied by a most unfavorable prognosis. Penetrating injuries of such retro-peritoneal structures as the colon, pancreas, duodenum, associated as they are with retro-peritoneal damage are most often fatal. The lapse of time between operative intervention and the injury, hemorrhage with associated shock have become of lesser importance in the prognosis. The improved facilities for adequate and continuous blood replacement and the advent of antibiotic therapy coupled with the generous use of these agents by the surgeon has produced this change. The optimum time for abdominal casualties however continues to be preferably less than four and not later than six hours after the injury.

OBJECTIVE MANAGEMENT

A generous abdominal incision will reward the operator. Tht presence of a large amount of blood impels the surgeon to locate the source of the bleeding at the very beginning of the laparotomy. Then the abdominal viscera should be explored.

The multiple of two rule applies particularly to the small intestine. All of the small intestine must be visualized prior to determining definite treatment. Unless complete visualization is done, valuable time may be lost in closing perforations which are adjacent and require bowel resection. Mesenteric stripping of greater than five cm usually requires segmental resection. Mesenteric hematomas adjacent to the bowel require inspection of the mesenteric border of the bowel to eliminate a perforation. More deeply situated quiescent mesenteric hematomas are not disturbed.

With colon perforations, retro-peritoneal hemorrhage and spillage produce virulent infections. Flank drainage is preferable in injuries of ascending and descending segments. If simple closure is feasible, proximal decompressive colostomy is preferable. If damage necessitates resection, exteriorization is attendant by better results than primary anastomosis.

The spleen, liver and stomach, and less often the doudenum and pancreas are in-

jured simultaneously. Any spleen injury, regardless of how trivial, is indication for splenectomy. Few gastric perforations are single. Suture of the liver is not often successful and better results follow the use of a gelfoam or if necessary a gauze pack. Simple closure of the doudenum is mandatory. Adequate drainage for pancreatic wounds is preferable.

Bladder perforations are closed and either suprapubic or urethral drainage instituted. If the damage to the kidney is confined to the parenchyma or capsule and in some instances perhaps the pelvis, conservative surgery is attended by good results. Damage to the vascular pedicle requires a nephrectomy. Occasionally the patient may not have an opposite kidney.

Rectal impalements warrant a separate discussion. The penetrating object may enter the rectum through the anus or pierce the perineum and secondarily perforate the rectum. Most often the perforation is located on the anterior wall of the rectum and within reach of the palpating finger. The investigation should include the type of penetrating object, a sigmoidoscopic examination and a roentenogram of the abdomen for air under the diaphgram. If laparotomy is mandatory, possible injured viscera include the bladder, ureters and small bowel. Other injuries have been reported. The abdominal exploration should be thorough. The laceration should be closed, a temporary colostomy performed and the peri-rectal space drained by perineal route.

CONCLUSIONS

1. Few exceptions exist for operative intervention in penetrating abdominal injuries.

2. The value of a knowledge of the course of the penetrating object and the use of the rule of multiple of two for perforations is emphasized.

3. The prime factor for prognosis is the extent and nature of the injury.

4. Systematic abdominal explorations should be done prior to the selection of definitive surgical treatment.

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MEDICAL SOCIETIES AROUND THE STATE

IS YOUR COUNTY LEFT OUT THIS MONTH? SECRETARIES ARE REQUESTED TO SEND THE JOURNAL REPORTS OF THEIR COUNTY SOCIETY MEETINGS SO THAT NEWS FROM EACH COUNTY SOCIETY CAN BE INCLUDED IN THIS MONTHLY FEATURE.

Grady-Caddo

Members of the Grady-Caddo County Medical Society met in Chickasha for their last meeting.

Tri-County

The Tri-County Medical and Pharmaceutical Association and auxiliary recently held a dinner and scientific program in Hugo. H. G. Muchmore, M.D., director of the out-patient department at University Hospitals, Oklahoma City, was guest speaker.

Tulsa County

Charles G. Stuard, M.D., Tulsa ophthalmologist, was speaker at a recent meeting of the Tulsa County Medical Society. His paper was entitled "Surgery for Cataracts."

Ottawa-Craig

Information on the Ottawa-Craig county Medical Society can be found elsewhere in the Journal under the article about 50 Year Pin awards.

Jackson County

M. M. Appleton, M.D., Oklahoma City, was guest speaker at a meeting of the Jackson County Medical Society held recently in Altus.

Cleveland County

Guest speaker at the November business meeting of the Cleveland County Medical Society in Norman was George H. Garrison, M.D., Oklahoma City.

THE USE OF BANTHINE IN THE TREATMENT OF DUODENAL ULCERS*

THOMAS E. JOHNSTON, M.D.
OKLAHOMA CITY, OKLAHOMA

Numerous preparations have been developed during the past two decades for use in the treatment of gastric and duodenal ulcers. A few of these preparations are, the aluminum compounds, the tri-carbonates, various anti-spasmodics, the old standby, tincture of belladonna and more recently a steroid compound. All of these drugs afforded varying degrees of relief for a time and in the milder cases effectually controlled the ulcer and relieved the discomfort, but in the more severe cases, relief was only temporary or partial and the ulcer either persisted or recurred despite their continuous use plus a limited diet. If the ulcer failed to recur vagotonia returned to either partially or completely incapacitate the individual for varying periods of time, usually in the spring or autumn.

Grimson, Longino and their associates reported that Banthine (Methantheline bromide) produced prolonged depression of gastro-intestinal motility and usually depressed HC1 secretion and that the action thus produced was in effect a partial medical vagotomy when the medication was used in adequate dosages. Their report was so encouraging that the writer lost no time in obtaining some Banthine for use in the treatment of his own ulcer and later that of some of his patients.

Since March 1950, I have administered Banthine regularly to 145 patients for periods varying from three to 15 months with unusually gratifying results. During the earlier months of its use, administration was limited to patients who had demonstrable ulcers as revealed by roentegenological studies, and progress roentenograms were obtained in four to six weeks after treatment had begun. In the latter months of treatment, Banthine was used in cases who had had demonstrable ulcers at some previous time but who had only minimal to marked deformity of the duodenal bulb just prior to inception of therapy.

The majority of the patients treated in this series of cases were young men. The average age for the group was just a fraction under 32 years, and the average duration of the affliction was 6.8 years. Practically all of the patients developed ulcers during their period of service in World War II and had been receiving conventional therapy with only temporary or partial relief. Eleven of these young men had experienced perforation and 26 had had one or more major hemorrhages. An additional number had had tarry stools at irregular intervals usually preceded by weakness, vertigo and syncope. Only two cases had to discontinue the drug because of intolerance. The remaining 143 patients obtained relief when the proper dosage had been determined.

The symptoms usually disappeared within 48 hours, but in approximately 15 per cent of the patients, full relief was not obtained for periods varying from seven to 21 days. Sixty-five per cent of the patients required the use of some anti-acid preparation for neutralization of excess hydrochloric acid, but in these patients the use of aluminum preparations was much less frequent than in the past. In all cases metamucil was prescribed because I have found that even though the individual is not constipated, the use of a good bland bulk aids in prevention of gaseous distention and permits the effective use of smaller doses of Banthine.

Typical comments were: "Doctor, that is miracle medicine. I am getting along fine and I can't thank you enough for the relief." Also, "This medicine does the work when the going is the worse." Perhaps the most illuminating remark was, "Doctor, I have obtained relief for varying periods of time by the use of other medicines, but never have been so assured that continuous relief is within my grasp."

Progress roentgenograms at the end of four-five weeks revealed disappearance of the ulcer in 141 cases. The two patients who failed to show healing at this time were continued on medication but the dosage was increased and later fluoroscopic and x-ray

Reviewed in the Veterans Administration and Published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion of policy of the Veterans Administration. Dr. Thomas E. Johnston is a full-time employee of the Veterans Administration Regional Office, Oklahoma City, Oklahoma.

studies disclosed healing. When the individual patient had been satisfactorily established on his maintenance dose (varying from 25-100 mg.) he was told that he could eat any type of food but advised that it was not desirable to use pork or rough foods too regularly. In all cases, as has been my custom for some time, defatted milk was substituted for the whole milk or milk and cream previously used. Substitution of defatted milk in the diet for whole milk or milk and cream apparently does two things: First, the individuals who have gained excess weight, especially in the abdominal area, lose it fairly rapidly and second, its use prevents the formation of troublesome quantities of gas and the patient develops an appetite for other foods. All of these patients were told that they were free to take a bourbon and seltzer water highball after any meal if they so desired.

BANTHINE USE IN OTHER CASES

Three patients with doudenal ulcer and one psychoneurosis with G. I. Conversion symptoms had the additional diagnosis of erythema multiforme. In these cases the oral and cutaneous lesions were relieved in 12-24 hours and marked regression of the lesions was noted within 48 hours. These cases were referred to me by a dermatological specialist who noted in their history that just prior to the appearance of the oral and cutaneous lesions the patients had experienced acute exacerbations of their gastrointestinal lesions. At this time some two months later, lesions had not reappeared.

Banthine was used in one case of gastric ulcer with dramatic results. This 50-year-old male obtained complete symptomatic relief within 12 hours and has remained continuously asymptomatic. The initial roentgenogram revealed the presence of a large crater on the lessor curvature of the stomach. Progress x-rays in four weeks revealed marked dimunition in the size of the ulcer and the eight weeks fluoroscopic and x-ray studies revealed complete healing. The patient is still maintaining symptom free and is very happy with relief obtained.

Only one case of chronic ulcerative colitis was seen during the past 15 months. This patient came in complaining of persistent hunger and weakness despite frequent bland meals. He weighed just 131 pounds and was 73 inches in height. The patient's history and roentgenological studies suggested that he was experiencing the dumping syndrome. After being placed on 100 mg. Banthine dosage he was able to satisfy his hunger with regular meals and at the end of seven days, had gained five pounds. Within three or four weeks he felt able to return to work, The initial roentgenographic study in this case revealed a markedly moth-eaten appearance of the mucosa of the large intestine. Follow up studies in the case were not available because the patient moved away.

TOXICITY

The side reactions of Banthine were found to be usually rather mild although a few patients complained of excessive dryness of the mouth. It was found that this dryness could be markedly mitigated by having the patients chew gum during that period of time. Three patients had to make three attempts at taking Banthine, quitting in each instance in three or four days, but finally they persisted and found the dryness much less noticeable after several days of treatment and maintained on treatment.

Dimunition or slowing of the urinary stream was not noted in this group of patients perhaps because of their youth.

Full doses of 100 mg. were given only to those patients who were nauseated, vomiting or experiencing intractable pain or hemorrhage and in even these cases, it was usually possible to discontinue taking the night dose within seven days. A few of the older patients experienced some visual disturbance, i. e., frontal and occipital headaches, but these cleared up in six or seven days unless the patient was in need of spectacles.

Except in the more severe cases, the patients were given an initial dose of one tablet (50 mg.) every six hours. A few of these cases required a later increase to one and one-half tablets (75 mg.). The patients were advised to space their meals approximately six hours apart and instructed to take the medicine from 30 minutes to one hour after meals. The timing of the dosage depending on the promptness with which post meal pain appeared. All of these patients were instructed to disregard the night dose unless awakened by pain. Occasionally it had to be taken but usually after two or three weeks, only at very infrequent intervals. None of the patients have developed any toxic symptoms that required discontinuance of the drug.

Use of an effective bland bulk seems to be indicated to produce maximum relief with a minimum dosage of Banthine. Also, after a period of time on the medication the patient appreciates the necessity of increasing his dosage in times of additional physical or emotional stress and is therefore enabled to pursue occupations hitherto interdicted to him because of his disability.

A number of patients who have been placed on Banthine prior to receiving treatment in this office were not getting effectual results because in numbers of cases, the medication has been given 30-45 minutes before meals. This pre-meal administration caused undue drying of the buccal mucosa at a time when the saliva was needed in proper mastication of food. Given at this time, it also caused too great a slowing of the digestive processes just when increased secretion was needed for proper digestion and also caused retention of food in the stomach for a longer period than was compatible with a feeling of well being.

SUMMARY

The majority of the patients under treatment tolerated the drug well. Those given the full dose of 100 milligrams every six hours were the severe acute cases and relief was obtained withous embarrassing or irritating side effect. The youthfulness of this group of patients is quite apparently the reason no urinary difficulties were encountered.

The use of Banthine, bland bulk and occasional anti-acids has permitted this young group of patients to work at jobs requiring heavy manual labor, such as: roughnecking in the oil fields, steel work, carpentry, stonemasonry, farming and other strenuous physical occupations. Another group that distinctly benefitted were people engaged in sales work on a commission basis.

CONCLUSIONS

1. Banthine has proven to be extremely effective in controlling the symptoms and healing the lesions of duodenal ulcer.
2. Continuous use of Banthine prevents the recurrence of the ulcer and precludes the eventual need for surgery.
3. Effectiveness of Banthine in the treatment and control of the lesions of erythema multiforme suggests its possible effectiveness in this and other dermatological diseases somewhat similar in nature.
4. The prompt relief and healing of the lesions in the gastric ulcer patient and the ulcerative colitis patient is encouraging but not conclusive.

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MEET OUR CONTRIBUTORS

Charles M. O'Leary, M.D., A.B., wrote "Penetrating Abdominal Injuries" in this issue of the Journal. Doctor O'Leary received his medical degree from the University of Oklahoma in 1934. Doctor O'Leary interned at Henry Ford Hospital in Detroit and also took a residency there with one year at University Hospital, Oklahoma City. He is a fellow of the American College of Surgeons and has been certified by the American Board of Surgery. He has practiced in Oklahoma City 13 years.

J. B. Morey, M.D., Ada, is the author of the "Role of Potassium in the Body," which appears in this Journal. Doctor Morey was graduated from the University of Buffalo in 1927, and interned at Buffalo City Hospital, New York. His residency in internal medicine was also served at Buffalo. He is a fellow of the American College of Physicians. Doctor Morey was a Lt. Col. in the medical corps in World War II.

Thomas E. Johnston, M.D., wrote "The Use of Banthine in Treatment of Duodenal Ulcer" in this Journal. Doctor Johnston was graduated from the University of Arkansas School of Medicine and practiced in Topeka, Kansas, seven years. He was also in the army six years and practiced at Bald Knob, Arkansas, for seven years and at Woodward before coming to Oklahoma City where he is associated with the Veterans Administration.

Wiley T. McCollum, M.D., B.S., Oklahoma City, was graduated from the University of Oklahoma School of Medicine in 1940. He received a B.S. degree previous to that from Oklahoma A. and M. college. He has been certified by the American Board of Internal Medicine and is a member of the American College of Physicians. Doctor McCollum's specialty is internal medicine with cardiology as a sub-specialty. He served 42 months in the Pacific theater of operations during the war.

ROLE OF POTASSIUM IN THE BODY*

JOHN B. MOREY, M.D.
ADA, OKLAHOMA

Interest in the role potassium plays in the functioning of the body in health and disease has become greatly accelerated in the past few years as investigations have added to our knowledge of how potassium is utilized in the body in health and the various conditions whiich may be complicated by hypopotassemia or hyperpotassemia. Whether a patient survives his primary illness or not may depend upon our ability to suspect, diagnose, and correct hypo—or hyperpotassemia.

Potassium is one of the important cations of the body. It is found intracellularly. There is about 30 times as much potassium found in the body cells as in the body fluids. The liver and the muscles contain the majority of the body potassium. The normal serum potassium is 4-5.4 milliequivalents per liter or 16-21 mgm per cent.[1] The intracellular potassium is about 115 milliequivalent[2] per liter or 23 times the serum potassium. The total potassium content of the body is about 4,000 milliequivalent (160 gms) of which 70 milliequivalent (2.7 gms) is in extravellular fluid. Serum potassium is too low if 3.5 milliequivalents per liter or less and too high if 6.5 milliequivalents per liter or above. The height of the serum potassium is almost always a direct action of the concentration of intracellular potassium.

The normal daily requirement of potassium is estimated to be between 50 and 100 millequivalent.[3] Individuals on a normal diet will ingest from 42-135 millequivalent of potassium daily. Potassium given in excess of bodily needs to a normal individual is not retained over 24 hours in the body. The minimal excretion of potassium in individuals not receiving potassium is 1-90 millequivalent of potassium per 24 hours.[3]

The equilibrium between intracellular and extracellular potassium is constantly changing. Experiments using radio-active isotopes[4] have shown that cell membranes are permeable to sodium and potassium ions. Radioactive potassium ions require 15 h. to reach equilibrium with intracellular potassium. Evelyn[5] by using radioactive potassium found that when potassium is added to blood serum there is a reciprocal exchange of potassium ions between the serum and the red blood cells. In his experiments 1.6 per cent of the potassium of the red blood cells was exchanged in each direction each hour. This exchange is more rapid in other cells of the body. Potassium is constantly being excreted in the urine by the kidneys. The renal mechanism seems to be designed more for the excretion of excess potassium than for the conservation of potassium. Losses can be greatly exaggerated by diuresis, acidosis and adrenocortical hormone. There are also a number of other factors that enter into the constantly changing equilibrium between intra- and extracellular potassium. Gastric juice[6] contains some 40 milliequivalent per liter of potassium. Most of this is usually reabsorbed but in vomiting or gastric lavage or suction, most of it is lost to the body. There are about 10 milliequivalent of potassium lost each 24 hours in the stool. Diarrhea increases this loss. This amount of potassium ingested in food each day is a factor. Cellular breakdown as occurs in starvation trauma or disease causes a change in equilibrium.[7] With each gram of nitrogen released from cell breakdown 2.4 gm. of potassium are released from cells to the extracellular fluid. Glycogenesis carries potassium from the extracellular fluids into cells, especially the cells of the muscles and liver and can be increased by the ingestion of glucose and the injection of insulin and epinephrine.[8] Expansion or contraction of extracellular fluid will cause a shift in equilibrium.

The function of potassium in the body is not entirely clear. In order for potassium to go from the plasma where concentration is low into cells where concentration of potassium is high energy has to be expended.[5] This energy is thought to come from the utilization of glucose. Insulin and epinephrine both seem to cause more potassium to move into cells.[7] Potassium occurs intracellularly in an ionized state and in colloidal state. Potassium in turn seems to be necessary for the normal enzymatic processes in the carbohydrate cycle of metabolism. Potassium seems to play a role in

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muscle activity. During muscular activity potassium is lost from the cells in exchange for sodium. This loss is in some way related to actual contraction of the muscle or its immediate recovery phase. It plays an important role in the normal functioning of the neuro-muscular synapse. Potassium injections will re-establish contraction from nerve stimulation in a muscle previously paralyzed by curare. Schrader[9] in 1937 showed that rats fed diets low in potassium failed to grow at a normal rate. They were weak and listless, the hair tends to fall out and after several weeks the hearts of these animals showed areas of myocardial necrosis. Darrow and Miller [10] in 1942 were able to produce the same type of heart lesions in rats by feeding them a diet low in potassium and high in sodium and by giving them repeated injections of desoxycorticosterone acetate.

Under normal conditions we do not have to worry about the potassium in our bodies. As long as we are able to eat a well balanced diet our potassium intake will be adequate. Any excess intake over body needs will be excreted in the urine and stool. Even under diseased conditions if we are able to eat even a relatively balanced diet there is very little chance of the body concentration of potassium becoming so depleted as to be dangerous and if renal secretion is maintained there is no danger of developing hyperpotassemia.

Because of the importance of a normal intra- and extracellular concentration of potassium in the body, one should be familiar with the various diseased conditions in which the concentration may be increased or decreased. It is important to know the symptoms and findings characteristic of too much or too little potassium and to know what measures are necessary in order to try and return potassium concentration to normal.

Hypokaliema results from a number of different pathological conditions. Obligatory excretion in excess of intake will in time lead to a deficiency in potassium ions. This can be hastened by dehydration, trauma, shock, hemorrhages and sometimes surgical procedures. Conditions in which large amounts of fluids are lost by vomiting, duodenal drainage, drainage from fistulae, diarrhea, cholera, steatorrhea and pyloric obstruction will lead to hypokaliemia. The giving of fluids free of potassium over a period of time to a patient who is not eating may lead to hypokaliemia. There are rare conditions in which potassium is not absorbed from the intestinal tract in adequate amounts.

The administration or overproduction of some of the adrenal steroids may accelerate the excretion of potassium by the kidneys and lead to hypokaliemia. This has been observed by investigators in individuals who have been given desoxycorticosterone, adrenocortical extracts, ACTH and cortisone. In some cases of Cushing's syndrone associated with hyperactivity of the adrenal cortex a potassium deficiency may develop. Adrenal metaplasia in children and babies may lead to virilism and often to electrolyte embalance.

The importance of cellular exchange in producing a diminution of potassium concentration can be inferred in other disturbances of hydration, in familial periodic paralysis and in some cases receiving insulin, testosterone and glucose.

Potassium deficit may be found in both acidosis and alkalosis and must be corrected before the acidosis or alkalosis can be controled. Darrow[11] has shown that most cases of acidosis involve deficits of water, sodium, potassium and chloride. Potassium is lost through renal excretion and sodium is transferred from extracellular fluid into the cells to replace the lost potassium. This is thought to explain the resulting acidosis even though chlorides are lost in the urine. Alkalosis due to vomiting may show low potassium concentrations if abundant potassium free fluids are not available. Alkalosis resulting from potassium deficit occurs in some cases of Cushing's syndrome. A low serum chloride and potassium concentration develops and a high bicarbonate level occurs. The initial alkalosis developing during duodenal suction is at first due to the loss of chlorides. Administration of salt solution permits the kidneys to excrete potassium. If not corrected the serum bicarbonate level becomes high within a few days while the serum chloride and potassium drop. Occasionally high bicarbonate low chloride and potassium serum levels develop after a surgical operation without much loss of gastrointestinal fluids. This is thought to be due to the adrenocortical secretion resulting from stimulation by the hypophysis in response to trauma.[12] Injections of ACTH and cortisone may induce a deficit of potassium in

the serum and alkalosis.[11] The correction of alkalosis and restoration of the bicarbonate concentration in the blood serum to normal requires the retention of as much as six milliequivalents of potassium per kilogram of body weight and takes place rapidly after six days of potassium therapy.[11]

Diabetic acidosis is one of the most common and important conditions associated with hypopotassemia. The recognition and correction of the hypopotassemia may mean the difference between recovery and death. The hyperglyceria per se is not considered to cause a loss of potassium. In diabetic acidosis there is an increase breakdown in body cells with release of potassium into the extracellular fluid. Polyuria develops. Glucose and keto acids are excreted in large quantities carrying off much fixed base.[13] Vomiting enhances the loss of water, fixed base and chlorides. Potassium is lost in large quantities. Extracellular dehydration develops with loss of sodium and chloride ions and intracellular dehydration with loss of potassium and phosphate ions develops.[14] As the patient becomes worse food intake ceases and the urinary output decreases but potassium still continues to be released from the broken down cells of the body. When first seen, the serum potassium may be normal or slightly elevated. Within 2-18 hours of beginning treatment the concentration of the potassium in the serum begins to fall. The cause of the low serum potassium is two-fold. First by giving adequate amounts of fluid the extracellular fluid is expanded thus diluting the potassium ions present and secondly there is a shift of potassium back into the cells as a result of giving insulin and the oxidation of glucose. The fall in serum potassium should not only be looked for but anticipated and treated vigorously, making sure however, that good renal function has been restored.

The potassium level may be low, normal or high in uremia.[1] Hoffman[14] states that an intake of 70 milliequivalents of potassium requires a potassium clearance of only 10 cc of plasma per min. by the kidney to maintain a normal concentration of potassium in the serum. Since 130 cc of plasma are cleared of potassium by glomerular filtration the normal kidney tubules must reabsorb 90 per cent of the filtered potassium to keep from exhausting the body supply. Actually more potassium than is filtered reaches the absorbing tubules because some potassium is secreted by the secreting kidney tubules.[15] Osmotic diuresis, excretion of large quantities of acid and hormonal inhibition influences tubular reabsorption. Whether potassium concentration is less, normal or high in uremic states depends upon the extent and location of the kidney pathology.

The diagnosis of hypokaliemia depends upon a knowledge of the type of case in which it may occur, keeping in mind that it may occur and then verifying it by determining the concentration of potassium in the serum. Determination of the concentration of potassium by using the flame photometer is the most accurate method. There are suggestive symptoms and changes in the electrocardiographic tracings that are very suggestive of hypopotassemia. A low blood pressure with a widened pulse pressure, abdominal distention, paralytic ileus, parathesias of the extremities and paralysis of skeletal muscles are highly suggestive of hypopotassemia.

Bellet et al[16] have observed five different patterns in their electrocardiographic tracings taken on individuals with hypotassemia. They used the conventional limb leads and also CR_2, CR_3, CR_4, and CR_5. In their experience leads CR_2, CR_3, and CR_4 gave the clearest indication of low potassium concentration. Sixty-four of 79 patients showed patterns one and two. The first pattern showed depression of the ST segments with lengthening of the QT intervals. The ST segments may be so depressed as to resemble an inverted T. Pattern II showed prolonged QT intervals, inversion of the T waves and frequently prominent U waves. Pattern III showed prolonged QT intervals with upright T waves occupying almost the entire RT or ST intervals. In pattern IV the T waves were almost isoelectric and were followed by prominent U waves. The QT intervals were difficult to measure. Bellet and his coworkers feel that it is more accurate to measure the QU intervals. In pattern V the QT intervals were not prolonged. The T waves were quite normal in appearance but the U waves were very prominent and came almost as soon as the downstrokes of the T waves touched the isoelectric line.

The QT intervals were about .504 seconds for serum concentrations of potassium below four milliequivalents per liter.

Electrocardiographic tracings are of no value in cases that have been treated with digitalis or quinidine or in cases of anoxia, coronary occlusion, pulmonary embolus,

shock-like states, hypertension or in certain other cases that have myocardial damage. Hypopotassemia is the most common cause of prolonged QT intervals. Hypocalcemia may cause prolonged QT intervals but the T waves are unaltered and there is an isoelectric period between the S and T, or R and T waves.

The treatment of hypopotassemia may be two-fold: prophylactic to prevent the condition from developing and active treatment to correct the low concentration after it has developed. Randall[6] has found that by giving two grams of potassium daily by mouth preoperative and postoperative a negative potassium balance could be prevented. Martin[17] states that potassium deficiency may develop in about 16.3 days on a poor food intake. Low potassium levels will develop after 5.3 days of gastric suction if there has been a poor food intake for 7.5 days preceding the beginning of suction. 3-6 gms of potassium in a one per cent two per cent solution of potassium chloride may be given each 24 hours as a prophylactic dose.

The active treatment of hypopotassemia is best carried out by giving potassium in the form of potassium chloride by mouth or stomach tube when these routes are available. There is far less danger of toxic reactions when potassium is given this way for in the presence of normal kidney function an over-dose of potassium by mouth is practically unknown. Three-tenth grams in divided doses by mouth may be given every 24 hours until the deficit is controlled. Concentrated meat broths too are of value because of their high content of potassium.

Potassium can, when necessary, be given subcutaneously or intravenously. Extreme caution must be used if kidney function is poor. Martin's[17] plan of treating hypopotassemia is as follows:

If the deficit is acute six-nine gm of potassium should be given every 24 hours in a one per cent-two per cent solution of potassium chloride. In the severe chronic states of potassium deficit 20 gms of potassium should be given every 24 hours. The 20 grams may be given in a three per cent-one per cent solution intravenously or 10 grams of potassium chloride may be given intravenously and 10 grams orally every 24 hours. A useful solution that may be used either intravenously or subcutaneously consists of one part potassium chloride and two parts of glucose. The addition of phosphates to the intravenous solution is indicated in treating diabetic acidosis. Butler and Talbot's solution contains 30 millequivalent of sodium, 22 milliequivalent of chloride, 15 milliequivalent of potassium and three milliequivalent of phosphate per liter of five per cent-ten per cent glucose solution. Darrow's solution contains four gms sodium chloride, 2.7 gms of potassium chloride and 52 cc of molar sodium lactate per liter. The total amount of this solution should rarely exceed 80 cc per kg of body weight per 24 hours and should require four or more hours to give. This solution works well if potassium deficit and acidosis exist at the same time. Darrow[18] has demonstrated that infants having diarrhea recover much faster if given potassium and have a much lower mortality rate. If alkalosis and hypopotassemia[11] exist at the same time in a patient a solution containing six grams of sodium chloride and 2.7 gms of potassium chloride per liter is indicated. This solution may be given subcutaneously. If it is given intravenously, dilute one part with two-thirds parts of five per cent-ten per cent glucose in distilled water. The sodium chloride concentration in the solution may be decreased as the sodium deficit is corrected. Investigators have found that it may take four to six days to repair and correct potassium deficit in a patient.

Hyperpotassemia occurs in cases of renal failure, advanced dehydration, shock and adrenal insufficiency. It is possible to give potassium intravenously rapidly enough to produce toxic symptoms. It is almost impossible to give potassium by mouth fast enough to produce hyperkaliemia except in cases of renal failure, shock or adrenal insufficiency. It is unlikely that potassium concentrations ever reach lethal levels in Addison's disease.[19]

The diagnosis of hyperpotassemia depends upon the knowledge that this condition may develop to complicate cases of renal failure, dehydration, shock and adrenal insufficiency. Symptoms and signs plus electrocardiographic tracings are very suggestive and finding an elevated concentration of potassium in the blood serum clinches the diagnosis. The principal symptoms of this condition are listlessness, mental confusion, numbness, and tingling and feeling of heaviness of the extremities, sometimes flaccid paralysis of the extremities, cold gray pallor, poor heart tones, bradycardia at first and totally irregular heart rate, low blood

pressure and vascular collapse. The heart stops beating in diastole.

The electrocardiographic tracings show an increase in height of the T waves with steep ascending and descending limbs, sharp apex and narrow base. The QRS intervals become widened and the P waves become small and may entirely disappear. Intraventricular conduction defects simulating bundle branch block may develop. At what serum potassium levels symptoms occur is not exactly known. Serum concentration of potassium above 5.4 milliequivalent are higher than normal. Symptoms of electrocardiographic changes are more marked if the serum concentration of potassium increases rapidly. Uremia was present in all 13 cases of hyperpotassemia reported by Keith.[20]

The treatment of this complication is not satisfactory, probably because of the severity of the primary illness. Potassium should not be given. Injections of glucose, insulin and sodium chloride may help temporarily by shifting the serum potassium into the cells of the body. Injections of calcium are indicated if there is a deficit of that ion. The use of the cation exchange resins to absorb potassium ions from the walls of the intestines may prove in time to be useful.

At present the determination of whether there is hypopotassemia, normal serum concentration or hyperpotassemia is accomplished by measuring the concentration of potassium in the serum. This is best done by the use of the flame photometer. The apparatus is expensive but the method is cheap, quick and accurate. The concentration of potassium in the cells cannot be determined by ordinary clinical methods. Symptoms seem to depend upon the serum concentration rather than the concentration of potassium in the cells. It seems reasonable, however, to think that as our knowledge increases we will find that the intracellular concentration of potassium is even more important than the extracellular concentration of potassium and that simple methods for its determination will be discovered.

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OKLAHOMA STATE MEDICAL ASSOCIATION

ANNUAL MEETING

MUNICIPAL AUDITORIUM OKLAHOMA CITY

MAY 19, 20, 21, 1952

TREATMENT OF MYOCARDIAL INFARCTION DUE TO CORONARY THROMBOSIS

A Preliminary Report

W. T. McCOLLUM, M.D., F.A.C.P.
OKLAHOMA CITY, OKLAHOMA

The treatment to be outlined in this paper was not intended to question the merits of other treatments but was organized in hopes of reducing the present intitial mortality due to myocardial infarction. All the drugs and procedures used have been used previously, but not as a routine procedure.

A group of 80 cases treated in private practice by the author constitutes the basis for this report. All cases demonstrated diagnostic evidence in the electrocardiogram of myocardial infarction. This diagnosis was made only when definite breakdown in the QRS complex was present. Patients with only T-wave changes indicative of ischemia were not included in this report for obvious reasons. Patients can have transitory myocardial ischemia (demonstrating primary T-wave changes in the electrocardiogram) and not develop myocardial infarction. Complete uniformity of treatment was attempted throughout this series. One year ago, one change was made. In selected cases, aqueous heparin was given intravenously for the first 48 to 72 hours while the slower therapeutic effects of dicumarol were taking place.

IMMEDIATE TREATMENT

When a diagnosis of myocardial infarction was made in the office, hospital or at home, the patient was immediately given morphine sulfate 16 mgm. (one-fourth gr.) and atropine sulfate 0.43 mgm. (1/150 gr.) intravenously or subcutaneously as dictated by the severity of the pain. This dose was repeated by the desirable route of administration when necessary to control pain. Quinidine sulfate 0.2 gm. (three gr.) was given orally. Demerol, dilaudid, pantapon, and other drugs were not used. At least 15 to 20 per cent of patients with myocardial infarction have nausea and vomiting due to their disease. Therefore, differentiation of the causes of nausea or vomiting due to the disease from those due to morphine sulfate might prove difficult or impossible. There did not appear to be any greater increase in nausea and vomiting. Atropine sulfate was used in conjunction with morphine sulfate to allay gastro-intestinal nausea and vomiting as well as apprehension. In addition, it was felt that atropine sulfate might decrease the vagal reflex which may lead to the introduction of a cardiac arrhythmia, particularly ventricular tachycardia or fibrillation. The pharmacologic action of atropine sulfate is such that some vasodilatation of the small arteries and arterioles supplying the myocardium, particularly in the ischmic zone surrounding the central area of the myocardial infarction, might result.

Sudden cardiac death often occurs as the result of ventricular tachycardia, ventricular fibrillation or ventricular asystole. Many reports indicate that quinidine sulfate is used only when extrasystoles develop. It is reasonable that, since quinidine sulfate is the drug of choice in the treatment of the severe arrhythmias, it might be wise to attempt to prevent them. In some patients extrasystoles may have occurred during the night when close observation was not usually obtained. Only a few of the patients had special nurses to check the pulse at frequent intervals.

EARLY HOSPITAL MANAGEMENT

All patients were hospitalized immediately. Morphine sulfate 16 mgm. (one-fourth gr.) was continued as needed to control pain, every one to four hours. The nurse knew immediately that the medication could be given as needed for relief of pain. Quinidine sulfate .02 gm. 3 gr.) was continued every four hours, day and night. At the end of two weeks the dosage was reduced to 0.2 gm. (3 gr.) every four hours during the day and 0.4 gm. (6 gr.) at bedtime. In view of the slight accumulative effect, this dosage was believed to be sufficient to maintain the patient through the night.

Anticoagulants: Dicumarol 300 mgm. was given on admission to the hospital. A prothrombin time was done daily and the

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dicumarol dose adjusted to the requirements of the individual patient. Usually, it was necessary to give 200 mgm. of dicumarol on the second day, and, at times, on the third day. The prothrombin time was maintained between two and one-half to three times the control prothrombin time. In most instances, dicumarol was continued until the patient became ambulatory. After the second or third week, prothrombin times were done one to three times a week. The daily maintenance dose of dicumarol was 75 mgm.

The anticoagulant effects of dicumarol were supplemented by those of aqueous heparin in 50 mgm. doses intravenously every four hours, day and night, for the first 48 to 72 hours, until the prothrombin time had time to reach a therapeutic level. Heparin was used in the patients with very extensive infarctions, in patients with previous infarctions, or in elderly patients. No known extensions of the original infarction were observed on this regime.

Oxygen: Oxygen was given routinely at a rate of five liters per minute by nasal catheter. The catheter gives an oxygen intake just as high as the ordinary mask or oxygen tent. On several occasions a Bennet mask and valve were used with 100 per cent oxygen at a rate of 15 to 20 liters per minute. Ashen, cyanotic patients improve immediately, the pulse slows, and blood pressure rises. The results will be very gratifying to patient and physician in many instances.

Shock: Previous reports state that the mortality rate in patients with myocardial infarction and a systolic blood pressure below 100 mm. of mercury has been twice as high as in those cases who maintain a systolic blood pressure above 100 mm. of mercury. For this reason, when the blood pressure dropped to the range of 100 mm. of mercury desoxyphedrine in five mgm. doses, not exceeding 25 mgm. per day, was usually used, or a marked fall in blood pressure was treated with doses as high as 10 mgm. intramuscularly immediately, and continued with 5 mgm. every four hours for the first 24 hours, reducing the dosage schedule on the second 24 hour period to the above mentioned total daily dose. The blood pressure routinely improved by 15 to 20 mm. of mercury. There were no apparent toxic manifestations. The patient should be observed closely and if excessive central nervous system stimulation occurs, sedation should be increased.

Intra-arterial transfusions of whole blood were not utilized.

Rest: All patients were treated at bed rest until the electrocardiogram revealed loss of injury (R-ST junction displacement) until the sedimentation rate returned to normal, and until the pulse and blood pressure were stabilized. The pulse usually stabilized first, later the blood presscre, thirdly the injury in the electrocardiogram, and finally the sedimentation rate. The reason for the variation in the duration of bed rest was obvious when one considers the varying sizes and severity of different infarctions. It was our opinion that a longer time would be required to heal the larger infarctions. By exploring at least six routine positions from V_1 through V_6 and frequently Vx, V_7, V_8, and V_9, and higher or lower lead positions, one can be quite sure of the anatomical size of the infarction. From this and other laboratory studies, it will be obvious that a small infarction might be treated at bed rest for four weeks, whereas an extensive infarction, several of which were included in this series, bed rest might be necessary for from three to four months. The work of Harrison and others has suggested early ambulation. It has been a well-established fact from a pathologic standpoint, that a white scar does not form in most instances under four to six weeks. Quoting the references of a 15 per cent incidence of rupture of the heart in myocardial infarction is erroneous, also, in that these reports, in most instances, came from mental institutions where the patients were maniacal and hyperactive. It has been the experience of this author and his close associates that rupture of the heart occurs at a frequency of two to three per cent in non-psychiatric patients.

Various work has suggested that the use of the bed pan greatly increases the metabolism and physical activity of the patient, thus increasing the heart rate and in turn, the strain on the heart. By using mineral oil, one or two ounces each night at bedtime, constipation can usually be prevented. The use of oil retention or plain water enemas can supplement this medication in the relief of patients who develop minor or major degrees of constipation.

Sedation: Early in the treatment of myocardial infarction, the use of morphine prevented the apprehension and nervousness of the patient, but later in the course of treatment, it was necessary in some patients

to use other drugs. In this group of patients, phenobarbital 32 mgm. (½ gr.) or sodium amytal 65 mgm. (1 gr.) four times a day was used. Pentabarbital sodium at bedtime can be used when needed.

Diet: In this series all patients were routinely placed on a 200 mgm. sodium liquid diet for the first 48 to 72 hours, until the patient began to stabilize. Distilled water was frequently used when pulmonary edema developed. Oklahoma City water supply was found to contain 10 mgm. of sodium per 100 cc. When the patient was taking 2,000 cc. of water per day, this would add 200 mgm. of sodium to his diet per 24 hours. After the first two or three days, the patient was placed on a 200 mgm sodium diet, and later on, a 200 mgm sodium select regular diet. The quality and sodium content of the diet was changed when the patient's condition warranted.

Miscellaneous: Digitalis and digitoxin have not been used in this group of patients except in two instances, where on the recommendation of a consultant, this preparation was advised.

Prevention of congestive failure by the abstinence of salt in the diet and water appeared satisfactory. Sodium removing resins (cation exchange resins) will be a further adjunct to the prevention and/or treatment of congestive failure in these cases in the future.

The place of alcohol in therapy of acute myocardial infarction is questionable. Alcoholic beverages have been used when indicated for "sedation" or upon the patient's request. Patients obviously could not smoke while receiving oxygen, in the early portion of their disease, and later, we explained that we have no scientific proof that tobacco produces dilatorious effects on the coronary arteries. About 10 per cent of the patients can precipitate anginal attacks by the consecutive smoking of two cigarettes. The general disadvantages of smoking were discussed. The patient made his choice, most returning to smoking. If extrasystoles developed, we advised them to abstain from its use.

CONVALESCENT TREATMENT

As a general rule, patients were given a period of convalescence approximately equal to the duration of their bed rest. However, this period was varied to suit the individual case, using as a gauge, the progress of the electrocardiogram, sedimentation rate, pulse, blood pressure, tolerance to activity without pain or shortness of breath, etc.

All patients have returned to their previous occupations, except in a few instances where they were doing extremely heavy physical labor, and in these, they were rehabilitated or reassigned to a lighter job commensurate with their physical ability. All patients returned to work, usually in three to four months.

To our knowledge, there have been two cardiac neuroses, and in both of these it was quite severe. One patient's good friends brought issues of *Esquire, Saturday Evening Post,* and other lay magazines to him while he was hospitalized to give him a "full education" on the pathogenesis, pathology and restrictions of his disease. From his cardiac standpoint he did well, but from the psychiatric standpoint it was necessary to see him at weekly intervals. On the weekly followup psychotherapeutic visits, he has shown marked improvement and has returned to work. The other patient also returned to work, in spite of the encouragement given him by his wife to remain an invalid.

Quinidine sulfate was continued in the above dosage after meals and at bedtime, until healing had occurred. The patient was encouraged to use nitroglycerin freely. Important to mention to the patient was the fact that nitroglycerine does produce "pounding in the head" and at times, headache. We cite the case of one patient who realized that he became short of breath on two different holes on the golf course. He was advised to take a tablet of nitroglycerin prior to playing these two particular holes and he has found that he can prevent the shortness of breath.

COMMENTS

Emphasis must be placed on the fact that the dosage of quinidine sulfate varied in individual patients. Some required 0.1 gm. (one and one-half gr.) every three hours to prevent extrasystoles, whereas 0.2 gm. (three gr) every four hours produced abdominal cramps and diarrhea. In other patients, extrasystoles developed and quinidine sulfate was increased to 0.4 gm. (six gr.) every four hours.

We should make some statement of explanation as to why some drugs were not em-

ployed in this series of cases. Pronestyl and Tromexan were developed after the institution of this regime. Conrad found Tromexan inadequate in that too frequent prothrombin times were necessary to observe its effects, and the wide swings in its effects were difficult to control. Aminophyllin and papaverine were not used because of their questionable efficacy. Repsitory heparin (such as Depoheparin) was not used because of the added expense of the drug. Three hundred mgm. has been advised by Wright and others as an initial dose, repeating with 200 mgm. at 12 hour intervals, if the Lee White clotting time was below 20 minutes. If the Lee White clotting time was above 20 minutes, then an additional period of time should elapse before repeating the dose.

Hemorrhage resulting from anticoagulant therapy (dicumarol) was seen in one case of emboli of the left kidney. The hemorrhage was not the result of the therapy. Another patient who had prostatic obstruction and required a retention catheter, developed minor hemorrhage due to irritation by the catheter, but did not require treatment. One patient with a chronic pyelonephritis had an extension of an old infarction associated with severe congestive failure and uremia. He developed hematuria of considerable magnitude on the day prior to death. This is the only death associated with significant hematuria. In this case, it was difficult to precisely evaluate the cause of the hematuria and/or death, even though post mortem examination was done. Most likely it was the result of dicumarol therapy. The most dramatic hemorrhage was in a patient with a past history of peptic ulcer one year previously. He had a massive upper gastro-intestinal hemorrhage requiring emergency treatment. One fresh whole blood transfusion and seven additional blood bank transfusions were given over a period of 12 hours. This patient was given 144 mgm. of Vitamin K intravenously at 6:00 p.m. and with the transfusions, had a normal prothrombin time at 8:00 a.m., the following morning. In our experience, the above dose of Vitamin K has proven superior to smaller repeated doses in the therapy of anticoagulant induced hemorrhage.

RESULTS

Eighty patients were treated with 10 deaths on the above regime. Six of these deaths were in patients experiencing their initial attack. One died on the tenth day of treatment and at autopsy had complete thrombosis of the right main coronary artery, with a pinpoint left coronary artery. One died within two hours after entering the hospital and had thrombosis of the left main coronary artery and extensive atherosclerosis of the right main coronary artery. This patient never recovered from the intial shock. Another patient died with complete thrombosis of the left main coronary, seven hours after institution of treatment. Another, an uncontrolled, old diabetic, died on the twentieth hospital day following a mild insulin reaction. He had been admitted with a hemiplegia and the electrocardiogram revealed a recent myocardial infarction. The hemiplegia was apparently due to an embolus from a mural thrombus. Postmortem examination was not done. One of the original cases, who was also a diabetic, died 12 days after hospitalization, his diabetes being difficult to manage. Postmortem examination was not obtained, but cardiac rupture was thought to have occurred. One other patient died with the original infarction 24 hours after hospitalization, three days after onset of the attack. He did not recover from the initial shock. The remaining four deaths occurred in patients with second infarction. One of these expired four hours after his second admission to the hospital. Another had approximately 25 per cent, functioning, normal myocardium at autopsy, excluding the old and recent areas of infarction.

This gave a mortality rate of 7.5 per cent in cases who succumbed to the original myocardial infarction, and an over-all mortality rate of 12.5 per cent including cases with previous infarctions, old and a recent infarction. This compared favorably with previous reports. The mortality rate of initial attacks of acute myocardial infarction has been difficult to ascertain. Jacobs, in reviewing 88 cases found the mortality rate to be 19.3 per cent in cases experiencing the initial attack of acute myocardial infarction. Wright, et al, reported a 15 per cent mortality in patients treated with conventional therapy plus anticoagulants as compared with a rate of 24 per cent in cases treated with conventional therapy without anticoagulants.

SUMMARY

We have presented a routine procedure in the treatment of acute myocardial infarction, and have attempted preliminary evaluation of the results. The low incidence of mor-

tality in this series suggested that this may be nearing an adequate treatment. No changes in the routine were made throughout the course of this series, except for the addition of aqueous heparin in the first 48 to 72 hours and alteration in the dosage of quinidine sulfate to suit the requirements of the patient from an idiosyncrasy as well as a therapeutic standpoint. We personally believe that more oxygen and quinidine sulfate should be used, that shock should be combatted and that desoxyphedrine may be an effective agent in this regard. When possible, anticoagulant therapy probably should be given all cases of acute myocardial infarction, since it is impossible to predict which cases will have extensions of the original thrombus or which cases will occlude another artery with the decreased coronary flow, blood pressure, etc., the result of the initial attack. Sufficient time should be allowed at bed rest and for convalescence for recovery, but when this recovery has taken place, all patients should return to work for economical as well as psychiatric reasons.

Additional groups of patients will be treated in an attempt to evaluate bed rest, bed pans, oxygen requirements, quinidine dosages, etc.

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PLAN TO ATTEND

THE OKLAHOMA ACADEMY OF GENERAL PRACTICE

TULSA HOTEL TULSA, OKLAHOMA

March 17 and 18, 1952

CLINICAL PATHOLOGIC CONFERENCE

The University of Oklahoma School of Medicine
Presented by tht Departments of Pathology and Pediatrics

HOWARD C. HOPPS, M.D. AND HENRY B. STRENGE, M.D.
OKLAHOMA CITY, OKLAHOMA

DR. HOPPS: Diarrhea is a common symptom in infants and may reflect a variety of diseases. That was an initiating complaint here and the major problem for us today is determining the cause of this diarrhea. Several things about the history may seem a bit strange, but this case is one which was seen here almost six years ago, at which time therapy was of necessity quite different. Doctor Strenge will discuss and analyze the clinical aspects of this case.

PROTOCOL

Patient: B. D. W., white male infant, age three and one-half weeks.

Chief Complaint: Vomiting—seven days; diarrhea—six days.

Present Illness: This three week white male infant was in good health and said to have been doing well when he suddenly began to vomit after each feeding (one week before hospital admission). The next day he began to have diarrhea, 20-26 times daily. The nature of the stool was not described. Five days after onset of this illness a local physician was consulted and gave "medicine." Apparently this did not affect the course. History stated that the patient lost a "great deal" of weight during this period but the exact amount is not specified. Cyanosis developed two days before hospital admission.

Past History: This infant was apparently normal at birth, full term, delivered by forceps. Birth weight was six lbs. 14 oz. There had been no respiratory infections. Formula consisted of evaporated milk, oz. 6.5, water, oz. 11, and Karo, oz. one-half.

Family History: This was the mother's first child and it was stated that, "mother had uremia ante partum and is still sick." Father was living and well. There was no history of allergies, tuberculosis, diabetes or cardiovascular disease.

Physical Examination: Upon admission temperature was 103.2°; respirations 40; pulse not recorded. The child was emaciated and dehydrated—skin was dry and wrinkled; fontanelles were open and sunken. The baby lay quietly in bed holding himself still. There was "more or less tenseness of all muscle groups." Physical examination was done with the baby in an oxygen tent and it was stated that the examination was limited because a pronounced cyanosis developed when the baby was removed from the oxygen tent. Ears were negative to examination. There was a thin mucopurulent discharge from the nose. There was no lymphadenopathy evident. Respirations were shallow and somewhat jerky. Auscultation of the chest revealed normal tubular breathing with complete absence of rales. There were no cardiac murmurs. The abdomen was not distended; subcutaneous adipose tissue was "absent." There were no abnormal masses or solid viscera palpable. No rectal examination was done; the genitalia appeared normal. Reflexes could not be elicited due to hypertonicity of extensor muscle groups.

Laboratory Data: Upon admission RBC's numbered 3.97/cu.mm., Hb. 12 gm. per cent, WBC's 16,650/cu.mm. with 62 per cent neutrophils, one per cent eosinophils, 30 per cent lymphocytes, and seven per cent monocytes. No urine specimen was procured.

Clinical Course: The patient was given 30 ml. of M/6 sodium lactate solution intravenously and 15 cc. subcutaneously. Two hours later an additional 50 cc. of this solution was given intravenously. Temperature rose to 106.2° several hours after admission and tepid sponging was employed, lowering the temperature to 97°. Shortly thereafter it spiked to 101°; 5,000 units of penicillin (aqueous) was given intramuscularly and repeated q three hours. Cyanosis was apparently increased despite continuous oxygen (oxygen tent); 50 ml. of isotonic saline was given intravenously on the second hospital day. Later in the day cyanosis disappeared, but would quickly reappear if the baby were removed from the oxygen tent. On the second hospital day two cc. of calcium gluconate (four gr.) was given intravenously

with relief, for a short time only, of the "early tetany." The patient took fluid easily but seemed to have difficulty in swallowing. Much of the fluid returned through the nose. He was having an almost constant green liquid stool with no blood apparent, but containing a very small amount of mucus. Atropine gtts. II were given but the patient was still unable to take formula. A Breck feeder was used without success. Formula and all amounts of saline were given intermittently by gavage. On the third hospital day, while taking his formula, the patient became markedly cyanotic and respirations ceased. Coramine was given immediately and artificial respiration—spontaneous respiration returned but the patient remained slightly cyanotic and respirations were shallower than before. Cyanosis progressed and several attempts were made to give plasma intravenously, but these were unsuccessful. Cyanosis progressed and respirations became weaker and weaker, the baby did not respond to caffeine sodium benzoate, subcutaneously, and died on the third hospital day, 55 hours after admission. During the last 24 hours temperature varied from 98° to 100°.

CLINICAL DIAGNOSIS

DR. STRENGE: Considering the age of this infant, we should not overlook some conditions most often apparent in the neonatal period, the result of accidents and incidents at the time of delivery. The initial symptom, so far as we can tell from this history, is vomiting. The child appeared normal at delivery and did well for some two weeks when he suddenly began to vomit. Intestinal obstruction on a congenital basis is possible, but not probable. Most of such obstructions lead to vomiting earlier than this with the exception of pyloric stenosis. Intracranial disease can produce vomiting and intracranial disease is by no means infrequent in newborn babies, particularly as a result of trauma and hemorrhage within or about the brain. On the very next day of this patient's course a new symptom appeared that we must not minimize—a diarrhea of 20-26 stools daily is not a minor complication. With that violent a diarrhea in a previously healthy child whose only other symptom is vomiting, we must suppose some kind of infection. This is probably not the epidemic diarrhea of newborns, because this baby was at home alone and epidemics occur only where babies are together. However, it could be a viral diarrhea of the newborn period, or it could be a bacterial diarrhea. Five days after onset some kind of medication was given by the physician which did not affect the course except that two days later the child developed cyanosis. This cyanosis might just possibly be on the basis of medication. Bismuth sub-nitrate is frequently given in the treatment of diarrhea, may be reduced to nitrite in the gut and rarely produces cyanosis from methemoglobinemia. This is an unlikely possibility.

The only thing of particular interest in the history is the fact that delivery was by forceps — that might increase slightly the possibility of intracranial birth injury. The one important point mentioned in the family history is "uremia" in the mother; preeclampsia might increase the hazard of intracranial injury to the baby at birth.

Physical examination revealed fever and increased respiratory rate, tending to bear out our previous supposition of infection. the child was emaciated, markedly dehydrated—physical corroboration of the severity of the diarrhea previously described. The statement that the examination was limited because of pronounced cyanosis when the baby was removed from the oxygen tent indicates that the cyanosis was improved by oxygen. This excludes methemoglobinemia as a cause. Moreover, this improvement of cyanosis on breathing oxygen at increased tension suggests that it is on the basis of obstruction somewhere in the respiratory tract, as opposed to cyanosis associated with an intracardiac shunt. There was tenseness of all muscle groups and reflexes could not be elicited due to hypertonicity of extensor muscle groups. With a generalized hypertonicity of extensor muscle groups one might expect the child to be in opisthotonus. This is not mentioned. Fontanelles were sunken. I presume that the physical signs of meningitis were not present in this case since no lumbar puncture is described. The infection we are looking for probably does not involve the meninges, although we can't be sure of that in the absence of cerebrospinal fluid examination. The examination of the chest revealed "normal tubular breathing" with complete absence of rales. I cannot interpret this since tubular breathing is not normal in an infant; it is a sign of consolidation. Respirations are described as shallow and somewhat jerky. Sometimes we see fairly extensive cases of pneumonia in which respirations are so shallow that rales are not elicited. On the basis of this physical

examination one cannot rule out pneumonia as part of the disease process in this child. I presume that he was too sick for an x-ray to be obtained, since none is described.

So far as the laboratory data is concerned, we have only the blood count. There is an increase in the percentage of neutrophils over what one would expect in a baby of this age, corroborating our suspicion of an infection of some sort. The total white count is not increased when we consider how dehydrated this baby was. Bacterial cultures of the mucopurulent nasal discharge and of the stool would have contributed a great deal toward our evaluation of this case. So far, on the basis of physical and laboratory findings, I believe that this child probably had infectious enteritis with a superimposed pneumonia. I can not exclude meningitis. The neurological signs may well be a part of the acute infection with severe dehydration, possibly multiple thrombotic foci within the brain. On the other hand, they could be related to a brain injury incurred at the time of delivery.

The course in the hospital gives some further information, but not a great deal.

The amount of fluid given is hardly adequate for an infant as dehydrated as this one is said to have been. The dosage of penicillin, 5,000 units I.M. q three hrs. suggests that the date of this child's hospitalization was about 1945. Is this correct, Doctor Hopps? (Dr. Hopps replied, early in 1946) This dosage of penicillin would probably be considered homeopathic today. It does not seem to have produced much effect on the child's course. Cyanosis increased despite continuous oxygen. He was given some more fluid, but apparently not very much. Calcium gluconate was given with relief for a short time only of what is termed early tetany. Actually the signs described are not those of tetany. The child might well have had that form of tetany which may accompany severe acidosis. Usually though, it does not manifest itself until after the acidosis is corrected because with acidosis, even with a low serum calcium there is sufficient *ionized* calcium to prevent tetany. If we do see tetany in diarrhea it usually is after the acidosis has been corrected and I don't believe the acidosis was corrected by the relatively small amount of Na lactate given in this case. The cyanosis became worse, vomiting persisted and the child expired in spite of supportive therapy.

This is an interesting therapeutic problem as well as a diagnostic problem. We don't expect to make a specific etiologic diagnosis in severe cases of diarrhea such as this one. Our efforts are directed primarily at correcting the fluid, electrolyte and acid base disturbance. Faced with such a case as this today, I think that our administration of fluid would be much more intensive and that laboratory investigations as to the extent of acid base imbalance and Na and K disturbances would tell us the extent of abnormality here so that we could have corrected this imbalance. Whether or not we would have saved the patient's life is a totally different question. As to the etiology of this condition, today, we would assume that if this were a specific bacterial diarrhea it would not be sensitive to penicillin and would probably select some other antibotic. Ordinarily we trust the culture to indicate which of the antibotics would be most effective. Many of these children show infection with uncommon and peculiar organisms. In the neonatal period resistance is considerably less than at other ages, so that during this period diarrhea occasionally results from infection by Pseudomonas aeruginosa or organisms of the Proteus group. The fact that diarrhea was apparently associated with pneumonia in this case would not influence specific treatment particularly, since we usually give an antibotic which is absorbed to produce constitutional effect rather than one which acts locally on the intestinal tract.

My final diagnosis in this case is infantile diarrhea, probably on an infectious basis, complicated by pneumonia and possibly thrombotic phenomena within the brain producing the neurological symptoms described. A likely second possibility is some primary intracranial process such as intraventricular or subdural hemorrhage with superimposed enteric and respiratory infections.

ANATOMIC DIAGNOSIS

DR. HOPPS: This infant was quite emaciated at the time of autopsy—birth weight was somewhat over six and one-half lbs.; at autopsy weight was five lbs. 10 oz. The baby was still somewhat dehydrated. There was very little adipose tissue anywhere in the body. Upon opening the peritoneal cavity small and large intestines were seen to be moderately distended with gas — otherwise they appeared normal. The liver appeared essentially normal except for being a little

yellower and paler than usual. The spleen was slightly enlarged. On the whole the abdominal viscera were not remarkable, except for the moderate gaseous distention of the intestinal tract. There were no adhesions and no evidence of peritonitis. Examination of thoracic viscera revealed an essentially normal heart. It was a little smaller than normal for the age, but not small for the weight. There were no anomalies. The lungs together weighed approximately twice the normal and there were six foci of induration, 0.4 to 1.4 cm. in diameter, discolored dark red. They were widely distributed. In addition to these larger indurative areas there were very many smaller, yellow foci, less than 0.2 cm. in diameter, which appeared to be abscesses. When the tracheobronchial tree was opened, pus exuded from the smaller ramifications and when the lungs were sectioned numerous foci of suppuration were apparent. Furthermore, each pleural cavity contained a small amount of fairly thin fibrinopurulent exudate, so that early empyema was a part of this picture. The gastrointestinal tract was examined very carefully, grossly and miscroscopically. There were no changes to indicate a primary infectious diarrhea. The slight cellular infiltration of the lamina propria with moderate edema and hyperemia of the submucosa probably represents an *effect of* diarrhea. There were no ulcers or erosions and no inflammatory lesions which could be considered specific. Despite a clinical diagnosis of pylorospasm we found no evidence of pylorospasm either grossly or from microscopic sections taken to include the pyloric valve. In relation to the emaciation there was moderate fatty change in the liver of large vacuolar type.

Our final pathologic diagnosis was:

Bronchopneumonia, bilateral, necrotizing, suppurative—with at least an element of aspiration—and empyema, bilateral, fibrinopurulent, early

Septic splenitis

Parenchymatous degeneration of heart, kidneys and liver and with fatty change 1.v.) moderate, of the latter

Atrophy and interstitial fibrosis of pancreas, moderate

Gastroenteritis, slight, apparently nonspecific

Emaciation, marked, with atrophy of thymus

It appears that the primary process here was extensive, severe bronchopneumonia. Microscopic sections revealed even more abscess than was evident grossly. The larger foci of induration and reddish discoloration described grossly were found to be areas of hemorrhage within large areas of bronchopneumonia. The cause of empyema was readily apparent upon viewing numerous sub-pleural abscesses. This type of pneumonia is ordinarily caused by staphylococcus aureus, an organism which is particularly virulent for infants and small children and one very prone to produce just the type of necrotizing suppurative process which was observed in this case. As a result of this infection there was toxemia at least, possibly septicemia terminally, leading to septic splenitis and parenchymatous degenerative changes in the heart, liver and kidneys. All of these processes interfered with metabolism and with the mobility and mechanical function of the gastrointestinal tract leading to vomiting and diarrhea with resulting dehydration, electrolyte imbalance and emaciation. The more dehydrated and emaciated the child became the lower its resistance until finally, shortly before death some of the abscesses extended into the pleural cavity to produce empyema.

The pneumonic process might have been arrested by more effective antibotic therapy, although I suspect that a great deal of damage had occurred in the lung by the time the child was first seen in the hospital. However, with really effective antibiotic therapy and the effective management of fluid and electrolyte balance possible today, aided by such measurements of electrolyte balance as Doctor Conrad is able to do with the flame photometer, the case might have turned out differently. I would like to hear your views on this, Doctor Strenge, and also your comments on parenteral diarrhea, particularly in relation to such a pneumonic process as I have described.

DR. STRENGE: In the first place, I would like to ask a question; what did the sections of the pancreas show?

DR. HOPPS: There was a moderate degree of atrophy and interlobular septae were broadened somewhat. There was no dilatation of ducts or acini and the total amount of pancreas seemed to be quite adequate. I don't know whether or not these changes can be explained entirely on the basis of emaciation and infection, they did not seem to

warrant a diagnosis of even slight or incipient fibrocystic disease.

DR. STRENGE: This would be a very acute course for fibrocystic disease of the pancreas, but that is one of the best backgrounds for severe staphylococcal pneumonia in a baby. Now, regarding your question, I think you have given the answer. If this had been a specific bacterial dysentery, you would probably have found extensive inflammatory changes in the intestine, possibly with pseudomembrane formation. The absence of blood in the stool led me away from that diagnosis clinically. We do occasionally see bacterial dysentery without blood in the stool and we do see extensive neurological manifestations associated with certain types of bacetrial dysentery, but the pathological picture which you describe is adequate to exclude this.

From the findings at autopsy, I must conclude that this is an unusually severe case of parenteral diarrhea, associated with severe pneumonia. It is amazing that the symptoms of diarrhea and vomiting so far preceded cyanosis and other respiratory symptoms, assuming that this started off as a pneumonia.

GENERAL DISCUSSION

QUESTION: Isn't it unusual for pneumonia to exist for several days without any clinical evidence of such?

DR. STRENGE: Ordinarily, with a primary pneumonia, symptoms directly related to the respiratory infection, fever, cough, etc., precede diarrhea rather than following it by four or five days. This case is unusual in that respect. Another unusual aspect is the history of no respiratory infection during the baby's life. This case is an example of one of the differences between bacterial infection in infants and adults. Here, the infectious agent apparently hit the lungs first without the upper respiratory infection that usually precedes pneumonia in older children and adults. As to the neurological manifestations, I still am not willing to accept hypocalcemia as a cause. I would still suspect some intracranial disease and regret that an examination of the brain was not allowed.

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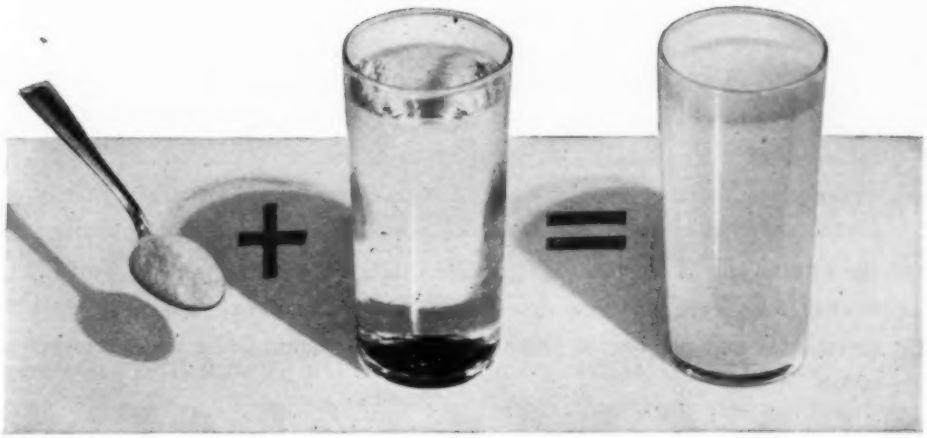

Typically, the constipated stool is dehydrated, whereas the diarrheal stool or that induced by salines and irritants is hyperhydrated, containing free water.

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SEARLE RESEARCH IN THE SERVICE OF MEDICINE

President's Page

Would you like an experience that renews your faith in the essential goodness of people and of the depth of their genuine love and appreciation for some of their doctors? Then let me urge you to attend one or more of the public meetings held to honor a medical practitioner who has cared for the people of a community for many years. The occasion usually marks the attainment of 50 years of practice. At the last such meeting we attended there were very few dry eyes in the hall at the conclusion of the ceremonies and not one of the speeches made sounded like an obituary either.

There have been complaints of commercialism among doctors and complaints that medical students are instructed in the science of medicine but not in the intangible things that make the practice of medicine a career of service to those who come to the doctor in their hour of need. I wish that every medical student and everyone who has been a medical student could attend such a meeting. Many of us would attain a different and a better conception of the true values in the practice of medicine.

L. McHenry

President

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Shigella Dysentery	Pericarditis*	Boutonneuse Fever
Endocarditis*	Psittacosis	Tick-Bite Fever
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	Relapsing Fever	Tularemia

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CURRENT ACTIVITIES AT THE OKLAHOMA MEDICAL RESEARCH FOUNDATION

EDWARD C. REIFENSTEIN, JR., M.D.
DIRECTOR

This is the third of a series of monthly articles designed to acquaint you with the activities at the Oklahoma Medical Research Foundation. In the first, a description was given of the physical plant, and in the article last month the general operational plans were outlined. The current presentation will describe the background and the general activities of some of the major scientific personnel of the Research Institute and Hospital. (See Figure 1.)

As has been pointed out in the second article in this series, the Board of Directors of the Oklahoma Medical Research Foundation made a decision to develop the facilities of the Research Institute and the Research Hospital as a single investigative unit with its primary emphasis on clinical research. It became apparent at once that it was essential to assemble an outstanding group of investigators with understanding, training, and experience in the special problems of clinical investigation. With a nucleus of such individuals as leaders, additional personnel could be recruited and trained to assist in the program, and all of the many other professionally-trained persons in the Medical Center and throughout the State could be integrated with the program so that their special skills could be employed at greatest advantage to facilitate the research endeavor. Such a group of investigators has been assembled, and will be introduced to you in the paragraphs that follow.

DR. MAX N. HUFFMAN

The first senior research investigator to be employed by the Foundation was Dr. Max N. Huffman who had been for several years Research Professor of Biochemistry at Southwestern Medical College in Dallas, Texas. Doctor Huffman is a nationally recognized organic chemist who has been synthesizing various agents of possible therapeutic value in disease conditions.

Doctor Huffman was born in Missouri. He graduated from the University of Missouri, and received a Ph.D. degree from St. Louis University. Doctor Huffman trained under Professor Edward A. Doisy who several years ago received the Nobel prize in medicine. Doctor Huffman was part of the original team which isolated the first crystalline estradiol. Dr. Huffman also served as a National Research Council Fellow in Medical Sciences at the College of Physicians and Surgeons of Columbia University, in New York City. Following this he was Director of Research for a pharmaceutical organization, the U. S. Standard Products Company in Wisconsin, and then spent five years at Southwestern Medical College. He is a member of a number of national professional societies and he has published over 30 scientific papers. Dr. Huffman began his work at the Foundation in July, 1950. He is Head of the Section on Organic Chemistry, and will continue to do research in the fields of cancer, rheumatoid arthritis, tuberculosis, and endocrinology. Doctor Huffman has an appointment as Professor of Research Biochemistry at the University of Oklahoma School of Medicine.

DR. EDWARD C. REIFENSTEIN, JR.

The next man to be named was Dr. Edward C. Reifenstein, Jr., the Director of the Research Institute and Hospital. Doctor Reifenstein is internationally known as an authority on medical diseases of bone and one endocrine disorders. Doctor Reinfenstein was born in Syracuse, New York. His father was Professor of Medicine at Syracuse University, and his uncle and two younger brothers are physicians. Doctor Reifenstein received his A.B. degree from Syracuse University, and his M.D. degree from Syracuse University College of Medicine. He obtained his hospital training in Syracuse. Doctor Reifenstein was associated for six years with Doctor Fuller Albright, at the Massachusetts General Hospital in Boston, doing advanced research in endocrinology and metabolic bone disorders. In 1946, Doctor Reifenstein went to New York City as a Consultant and later as a Research Associate at the Sloan-Kettering Institute, where he conducted investigations on the endocrine aspects of cancer. At the same time he served as a Consultant, and later as Executive Director of the Medical and Research Division of Ayerst, McKenna and Harrison, Limited, a pharmaceutical manufacturing organization.

Doctor Reifenstein is a member of the Committee on Therapeutic Nutrition, Food and Nutrition Board, of the National Research Council; a member of the Committee on the Diagnosis and Therapy of Cancer, Division of Medical Sciences, of the National Research Council; and a member of the Metabolism and Nutrition Study Section of the National Institute of Health. In addition to belonging to a number of other national organizations, he is a member of the American Society for Clinical Investigation, a Fellow of the American College of Physicians and a Fellow of the New York Academy of Medicine. Doctor Reifenstein is a co-author with Doctor Albright of a book on metabolic bone disorders and the author of about 80 scientific papers. In addition to serving as Director of Research for the Oklahoma Medical Research Institute and Hospital, Doctor Reifenstein is Head of the Section on Endocrinology and Metabolism. He is particularly interested in metabolic bone diseases and will conduct a program of investigation on this subject. He arrived at the Foundation to begin his duties in November, 1950. Doctor Reifenstein has an appointment as Professor of Research Medicine at the University of Oklahoma School of Medicine.

DR. CHARLES D. KOCHAKIAN

Additional appointments to the Staff of the Oklahoma Medical Research Institute and Hospital have followed in rapid succession. Doctor Charles D. Kochakian, who was formerly Associate Professor of Physiology of the School of Medicine and Dentistry of Rochester, New York, was appointed as Associate Director of the Institute and Hospital and joined the Staff in January, 1951. Doctor Kochakian is an endocrine physiologist and physiological chemist who is internationally known for his work on hormones, enzymes, nutrition and growth. He has served as a member of the Panel on Hormones, of the Committee on Growth, of the National Research Council. He is also a member of the Panel of Appraisers of the Handbook on Biological Data of the American Institute of Biological Sciences. He was awarded the Claude Bernard Medal and appointed a visiting Claude Bernard Professor of the Institute of Experimental Medicine and Surgery of the University of Montreal on April 27 and 28, 1950. He is also an Associate of the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine. He was the principal guest at a Conference on Steriod Hormones and Enzymes given by the Ciba Foundation in London, England, March 8 and 10, 1950. In addition Doctor Kochakian is the author of over 70 scientific papers.

Doctor Kochakian was born in Haverhill, Mass. He received his A.B. and A.M. degree in organic chemistry

from Boston University, and received his Ph.D. in physiological chemistry from the University of Rochester, Rochester, New York. He is a member of a number of national societies. He will continue his research on hormones and growth in Oklahoma. In addition, he is in charge of a Central Research Laboratory which is being developed in the Institute and supervises the facilities for animal experimentation as well as the Graduate Training Program. Doctor Kochakian has an appointment as Professor of Research Biochemistry in the University of Oklahoma School of Medicine.

DR. R. PALMER HOWARD

Dr. R. Palmer Howard, formerly Demonstrator in Medicine at McGill University in Montreal, Canada, and in charge of the Endocrine Clinic and Laboratory of the Montreal General Hospital, joined the Staff in April, 1951, as a Member of the Section on Endocrinology and Metabolism working with Doctor Reifenstein. Doctor Howard is an endocrinologist and clinical investigator, who is known for his work on testicular disorders and on metabolic bone conditions. Doctor Howard was born in the United States in Iowa City, but spent most of his life in Montreal. He received an A.B., an M.D., a C.M., and an M.Sc. degree from McGill University, served in the Royal Canadian Army Medical Corps for five years, and then continued his medical training at Johns Hopkins Hospital in Baltimore, Md., at the Massachusetts General Hospital in Boston, Mass., and finally at McGill. Doctor Howard is a member of a number of medical societies, and is the author of 18 scientific publications. He will work with Doctor Reifenstein on metabolic bone disorders and do some additional investigation on problems of endocrinology. In addition, he will participate in the undergraduate and graduate training programs of the Oklahoma Medical Research Institute and Hospital. Doctor Howard has an appointment as Associate Professor of Research Medicine in the University of Oklahoma School of Medicine.

DR. LEONARD P. ELIEL

Dr. Leonard P. Eliel, formerly Associate of the Sloan-Kettering Institute of the Memorial Hospital Cancer Center in New York City, and Assistant Professor in the Department of Medicine of Cornell Medical College, joined the Staff in August, 1951, as the head of the Section on Clinical Oncology. Doctor Eliel is a clinical investigator who has developed a national reputation for his work on the effect of hormones on malignant disease and the balance of body fluids.

Doctor Eliel was born in Los Angeles, California. He received his Medical Degree from Harvard Medical School, and had hospital training in Boston. For an interval Doctor Eliel was employed by the Pan American Airways, first as a Medical Officer in charge of laboratory and patient care, at the Base Hospital, in Accra, Gold Coast, Africa, and later as a Medical Officer in charge of flight crews from the New York area. During this period, Doctor Eliel's work included research on air sickness, a project done under a contract for the Naval Air Transport Command. Later, Doctor Eliel served actively in the United States Navy, and during this time did research on new anti-malarial and anti-filarial drugs. Doctor Eliel is a member of a number of Scientific organizations. He has published about two dozen scientific articles. Doctor Eliel will be in charge of clinical research in the field of cancer. In particular he will be studying the metabolic alterations that occur in patients with malignant disease and the changes that can be induced in such individuals by various agents which have an effect on normal or abnormal growth. He will participate in the undergraduate and graduate training programs of the Oklahoma Medical Research Institute and Hospital. In addition, Doctor Eliel has an appointment as Associate Professor of Research Medicine of the University of Oklahoma School of Medicine.

FIGURE 1. *Scientific Staff Section Heads of Oklahoma Research and Hospital.* Seated, left to right: Miss Shirley L. Wells, Director of Dietetics of Research Hospital; Dr. Edward C. Reifenstein, Jr., Director of Research Institute and Hospital, and Head of Section on endocrinology and Metabolism; Dr. Charles D. Kochakain, Associate Director of Research Institute and Hospital, and Head of Section on Biochemistry; and Miss Marian MacAulay, Director of Nursing of Research Hospital.

Standing, left to right: Dr. Leonard P. Eliel, Head of Section on Clinical Oncology; Dr. Robert H. Furman, Head of Section on Cardiology; Dr. Max N. Huffman, Head of Section on Organic Chemistry; and Dr. R. Palmer Howard, Member of Section on Endocrinology and Metabolism.

MISS MARIAN MACAULAY

The next person to join the Staff of the Oklahoma Medical Research Institute and Hospital was Miss Marian MacAulay, R.N., formerly Head Nurse of the Research Ward (Ward 4) at the Massachusetts General Hospital, Boston. She was appointed as a Member of the Staff of the Oklahoma Medical Research Institute and Director of Nursing of the Oklahoma Medical Research Hospital.

Miss MacAulay has been in charge of nursing on the Metabolic Research Ward of the Massachusetts General Hospital for the past nine years. She was born in Clinton, Massachusetts, but was educated in Canada. She graduated from the Charlottetown Hospital Training School at Prince Edward Island and since that time has worked in the Massachusetts General Hospital in Boston. She will participate in the planning of the clinical research program which is being evolved at the Research Hospital. She will be in charge of the undergraduate and graduate training programs for nurses at the Research Hospital. She joined the Staff of the Institute in August, 1951. In addition, Miss MacAulay has an appointment as Research Associate in the University of Oklahoma School of Nursing.

MISS SHIRLEY L. WELLS

Miss Shirley L. Wells, M.S., formerly Research Dietitian at the Massachusetts General Hospital in Boston, Massachusetts, also became a Member of the Staff of the Oklahoma Medical Research Institute in August, 1951. In addition, she was appointed Director of Dietetics of the Oklahoma Medical Research Hospital.

Miss Wells has been in charge of Dietetics on the Research Ward (Ward 4) of the Massachusetts General Hospital, Boston, for 15 years. She was born in Marshalltown, Iowa; and received a Bachelor of Science degree in Home Economics from Iowa State College, and a Master of Science degree in Home Economics from the State

FIGURE 2. *Administrative Staff of the Oklahoma Medical Research Foundation and Scientific Staff of the Oklahoma Medical Research Institute and Hospital in October, 1951.*

First row—Left to right: Hugh G. Payne, General Manager of Foundation; Gene White, Administrative Assistant to the General Manager; Alta Miller, Administrative Clerk; Martha Schreiber, Secretary; Dr. Max N. Huffman, Research Member; Bernice Katz, Research Assistant; Marian MacAulay, Director of Nureing; Mary Lott, Research Assistant; Dr. Charles D. Kochakian, Associate Director of Research; Josephine Hawrylko, Research Assistant; Dr. Edward C. Reifenstein, Jr., Director of Research Institute and Hospital; Dr. Alan J. Stanley, Research Associate; Shirley Wells, Director of Dieteties; Anita Eisheid, Reseach Assistant; Dr. Leonard P. Eliel, Research Member; Dr. R. Palmer Howard, Research Member; Hugh Schriver, Assistant Engineer; Lee Cramer, Chief Engineer.

Second row—Left to right: O. C. Estes, comptroller; Wilma Rust, Administrative Clerk; Shallon Reed, Receptionist; Luna Craver, Administrative Assistant; Dr. Dale Clark, Research Associate; Dan Nall, Research Assistant; Dr. Thomas C. Smith, Post-Doctorate Fellow; Clydelle Brownfield, Research Administrative Assistant; Richard Grundy, Laboratory Assistant; Ida Gist, Research Librarian; Leona Stansberry, Clerical Assistant; Raymodeen Wilkins, Research Administrative Assistant; Barbara Reed, Technician; Ruby Stephenson, Secretary; Clara Shetlar, Research Assistant; Leo Cawley, Laboratory Assistant; Dwight Smith, Laboratory Assistant; Virginia Richmond, Research Assistant; Dr. R. M. Shetlar, Research Associate; Jane Ann Bullock, Research Assistant; Cornelius Easley, Animal Caretaker; Alice Johnson, Maid.

University of Iowa. Thereafter, she worked as special dietitian in charge of research at the Massachusetts General Hospital. All the detailed metabolic studies conducted at this research ward for a period of 15 years were under her supervision. Miss Wells will participate in the planning of the clinical research program, and will be in charge of the undergraduate and graduate training programs for Dietetians at the Research Hospital. In addition, Miss Wells has an appointment as Associate Professor of Research Nutrition in the University of Oklahoma School of Medicine.

DR. ROBERT H. FURMAN

The latest addition is Dr. Robert H. Furman, who has been Assistant Professor of Medicine at Vanderbilt University School of Medicine, Nashville, Tenn. Doctor Furman will be a Member of the Staff of the Research Institute and Head of the Section on Cardiology. Doctor Furman is highly respected in Nashville and in national circles because of his progressive research activities in the field of cardiovascular diseases.

Doctor Furman was born in Schenectady, New York. He received his undergraduate training at Union College in Schenectady and his medical training from Yale University School of Medicine. Part of his hospital training was obtained at New Haven and the remainder at Vanderbilt University School of Medicine. Since that time he has been on the Staff of Vanderbilt School of Medicine except for a period when he served in the United States Navy. Doctor Furman has been an Eli Lilly Fellow in Medicine, and later a National Research Council Fellow in the Medical Sciences at Vanderbilt. He is a member of a number of national medical societies and has published a series of 12 papers. Doctor Furman will be in charge of clinical research in the fields of cardiovascular and renal disorders. He will study the metabolic alterations that occur in patients with pulmonary, cardiac, hepatic, and renal conditions particularly from the vascular point of view, and will initiate a program involving an investigation of fat metabolism as related to atherosclerosis. He will assist in the undergraduate and gradute training program of the Oklahoma Medical Research Institute and Hospital. Doctor Furman, in addition, will have an appointment as Associate Professor of Research Medicine in the University of Oklahoma School of Medicine.

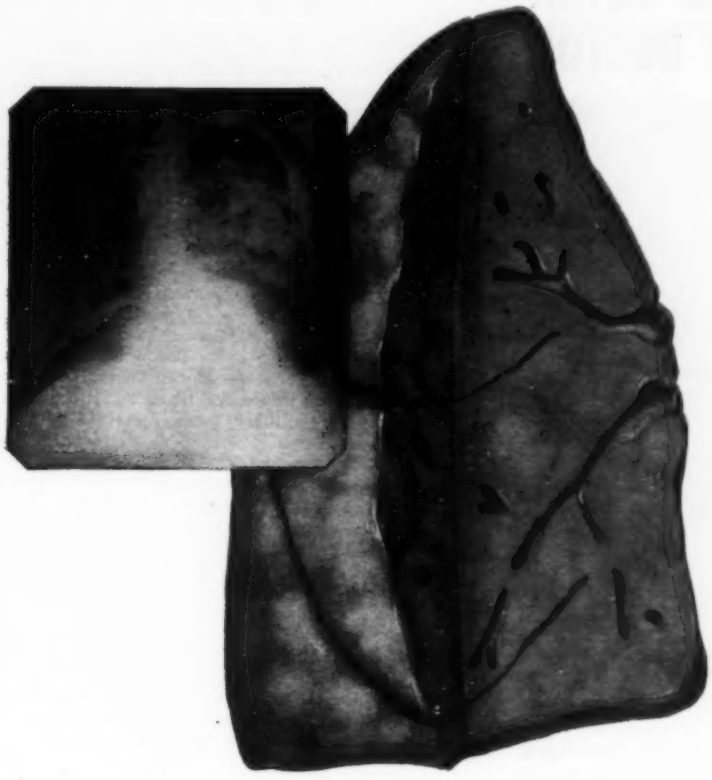
A large number of other persons will play important roles in the conduct of the research program as associates of the individuals who have been described in this article. A group picture of the Administrative Staff and Scientific Personnel as of October, 1951, is shown in Figure 2. The whole-hearted collaboration of a great many people is required to put into action the active program of the Oklahoma Medical Research Institute and Hospital.

SHOWMAN IS COUNCILOR

President L. Chester McHenry, M.D., has appointed W. A. Showman, M.D., Tulsa, to fill out the unexpired term of V. K. Allen, M.D., Councilor who died recently. Doctor Showman is president of the Tulsa County Medical Society.

ADVISORY HEALTH COUNCIL

Oklahoma Advisory Health Council met in Stillwater November 15. M. H. Newman, M.D., Shattuck, was named president-elect and Mrs. James F. McMurry, wife of Doctor McMurry of Sentinel, was re-elected secretary-treasurer.



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Potterfield, T. G., and Starkweather, G. A.: J. Philadelphia General Hosp. 2:6 (Jan.) 1951.

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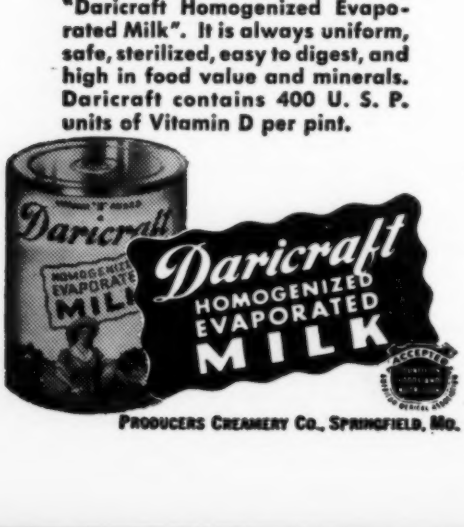

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BOOK REVIEWS

SURGICAL PRACTICE OF THE LAHEY CLINIC. Members of the Staff of the Lahey Clinic, Boston, Massachusetts. 2nd Edition. W. B. Saunders Company, Philadelphia-London, 1951.

This second volume, published almost 10 years ago after the first volume, principally consists of a collection of papers published by Staff members of the Lahey Clinic, who have had extensive experience with the procedures involved. It is difficult to review the entire volume in a short essay because of the wide variety of topics by so many contributors. In the preface, Dr. Frank Lahey states that the purpose of the book is an attempt to help other surgeons gain knowledge of the procedures which have been standardized at the Lahey Clinic over a period of years. This initial aim has been fulfilled. Included are sections of the Thyroid Gland and Neck, Stomach and Duodenum, Small Intestine, Colon, Sigmoid and Rectum, Biliary Tract, Spleen, Adrenal Gland and Pancreas, Breast, Pelvis, Bones and Joints, Brain, Spinal Cord, Nerves, and Anesthesia; the final section deals with miscellaneous subjects. It would be difficult to select any one section as more thoroughly presented than another, but one could scarcely find, anywhere, an equal to the section on the Thyroid Gland and Neck, and the section on the Biliary Tract deserves special consideration by the general surgeon. An endeavor has been made to include in each section a review of surgical anatomy and a discussion of pertinent pathological, physiological, and clinical aspects of the subject. The general principles of operative surgery are discussed in an interesting manner, and the technical steps of each operative procedure are well discussed and are illustrated by fine line drawings. A remarkable quantity of original observations have been compressed into the book; however, the various authors are not at all content merely to present data; they try, whenever possible, to develop a hypothesis on which to hang their observations. It is a very informative book for the general surgeon and a thought-producing one for the specialists in the various surgical fields. The student and surgeon will greatly aid and abet his efforts by reading this book carefully several times and then referring to the pertinent section in connection with each case he encounters.

The book consists of 1,014 pages and contains 784 illustrations on 509 figures. Each section contains many references, and there are two indices, one for subject matter, and one of the names cited throughout the book. The publishers are to be commended for this attractive edition; the paper is good, the type clear, and the illustrations have been clearly reproduced — H. M. McClure, M.D.

COUNTY SUPERINTENDENTS OF HEALTH APPOINTED

According to the Oklahoma State Department of Health, the following physicians have recently been appointed county superintendents of health:

D. H. Cramblet, M.D., Haskell County, Stigler; J. H. White, M.D., Carter County, Ardmore; Forest R. Brown, M.D., Seminole County, Wewoka; W. C. McCurdy, Jr., McClain County, Purcell; A. M. Brown, M.D., Noble County, Perry; and Cody Ray, M.D., Osage County, Pawhuska.

HAVE YOU HEARD?

C. F. Paramore, M.D., and *Mrs. Paramore*, Shawnee, have returned from a three weeks tour of Europe. In addition to visiting friends in England, they also visited their son, Robert, who is stationed in Germany with the 2th Air Group. He was granted a leave and flew to London for a week's visit with his parents.

Curt Von Wedel, M.D., Oklahoma City physician and ig game hunter, recently showed films and lectured on is African hunt at a program sponsored by the Newastle Better Neighborhood club.

W. A. Heflin, M.D. has opened his office in Ryan.

Fred Merrifield, M.D., formerly of Talogn, has recently moved to Mooreland.

E. L. Collins, M.D., Panama, was recently featured in he "Know Your Neighbor" column in the LeFlore County Sun, Poteau.

A. W. Hoyt, M.D., Chickasha, attended the national onference of physicians and schools in Chicago in November.

A. M. Mixon, M.D., Talihina, was recently presented a 50 year service pin by the Spiro Lions Club.

A. L. Dougan, M.D., Carmen, was featured on a national broadcast aired on the Mutual Broadcasting company "Tell Your Neighbor" program.

Edwin Fair, M.D., Oklahoma City, spoke on "Accent on Youth" when he addressed the Oklahoma City Lions Club recently.

William Bernell, M.D., Hobart, attended a two weeks postgraduate course in surgery in Chicago recently.

Several Oklahoma City physicians were speakers at the 44th Annual Meeting of the Frisco System Medical association. They were: P. M. McNeil, M.D.; George H. Kimball, M.D.; W. W. Rucks, Jr., M.D.; Dick M. Huff, M.D.; and C. R. Rountree, M.D.

LeMon Clark, M.D., Oklahoma City, discussed "Marital Adjustments" at Oklahoma College for Women recently.

Kirk Mosley, M.D., Oklahoma City, was guest speaker recently at the Oklahoma County Council of P-TA's. He spoke on "Preparation for Good Health for Good Living."

S. P. Ross, M.D., formerly of Ada and now of Oklahoma City, recently celebrated his 89th birthday.

George M. Rahhal, M.D., and *Mrs. Rahhal*, Atoka, announce the birth of Robert Ray Rahhal, November 24, 1951, weight six pounds, 12 and one-fourth ounces.

C. P. Bondurant, M.D., Oklahoma City, has been named chairman of the Oklahoma public welfare commission to serve a nine year term.

Paul B. Rice, M.D., Oklahoma City, recently attended postgraduate courses at the Cook County Graduate School of Medicine, Chicago.

J. C. Metheney, EENT specialist at Okmulgee for 29 years, has announced his retirement from the practice of medicine and reports that all unpaid accounts have been cancelled.

POST GRADUATE GROUP MEETS

Members of the Postgraduate Committee of the Association met in the Executive Offices in Oklahoma City November 29 to discuss postgraduate education for the coming year. The committee is working closely with the post graduate division of the University of Oklahoma School of Medicine and it is contemplated that a series of postgraduate programs will be held in the spring and fall of 1952.

POSTGRADUATE COURSES

in

RADIOLOGY — 3 days, February 25-27.

ELECTROCARDIOGRAPHY — 6 days, March 10-15.

OPHTHALMOLOGY & OTOLARYNGOLOGY — 5 days, March 17-21.

NURSING — 3 days, February 11-13.
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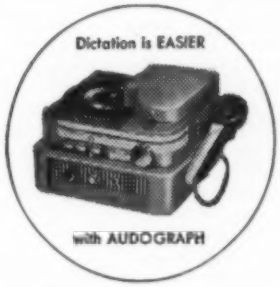

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TRIO OF EARLY DAY PHYSICIANS SWELL 50 YEAR CLUB RANKS

Three more Oklahoma physicians who began the practice of medicine in the horse and buggy days have received 50 year pins. T. H. Flesher, M.D., Edmond, received his pin at the Doctor Flesher Day staged by that city while Benjamin W. Ralston, M.D., Commerce, and J. W. Craig, M.D., Miami, were awarded their pins at a meeting of the Ottawa-Craig county medical society.

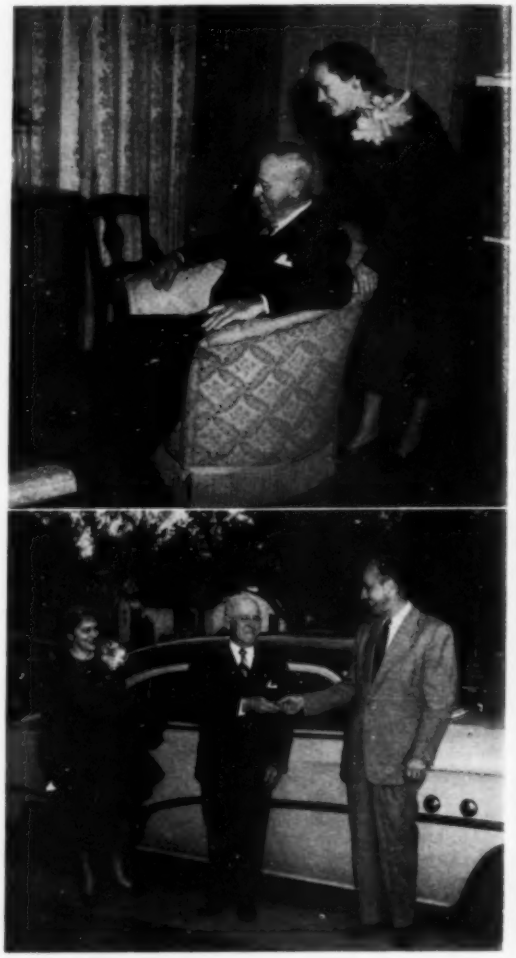
"Doctor Flesher Day" began with a parade through the downtown district of Edmond, a basket lunch and a program in the school auditorium. W. W. Rucks, M.D., Oklahoma City, long time friend of Doctor Flesher; and O.S.M.A. President L. Chester McHenry, M.D., were both on hand at the presentation of Doctor Flesher's 50 Year Pin.

Doctor Flesher was born in Reedsville, Ohio, but moved to Wayne County, Iowa, at an early age. In 1901, he was graduated from the Keokuk, Iowa, Medical college, now a part of the medical school of the University of Iowa. He is a past president of the Oklahoma County Medical Society. A captain in the medical corps in World War I, he was the first commander of the Frank Collins post 11, American Legion at Edmond. He is a member of the board of the First Methodist church, a past master of the Edmond Masonic lodge 37, a member of the Oklahoma Consistory No. 1 and the Sons of the Revolution, and a charter member of the Edmond Kiwanis club.

Doctor McHenry also made the 50 Year Pin presentations to Doctors Ralston and Craig, who also received O.S.M.A. life membership certificates.

Doctor Craig located in his home town of Shelby, Mo., when he began practice after graduating from the Missouri medical college, St. Louis, March 31, 1891. In the summer of 1900 he moved to Brookfield, Mo., and remained there for two years, when he moved to Vinita, Indian Territory. He remained in Vinita until 1925, when he moved to Miami. Doctor Craig served for several years as secretary of the Ottawa County Medical Society.

Doctor Ralston is a native of West Middleton, Pa., but took his early schooling in Nebraska. He was graduated from the University of Kansas School of Medicine in 1900 and interned at St. Joseph's hospital, Kansas City, Mo., before he came to Chickasha, Oklahoma Territory, in 1901, to establish his practice. En route, he was marooned by flood waters at Erin Springs, so he practiced there and later at Lindsay, until he moved to eastern Oklahoma more than 28 years ago. He still retains his Masonic affiliations at Okmulgee, where he was in practice approximately 18 months before moving to Miami and then to Commerce, where he practiced industrial medicine when the mines were at their busiest.



Top photo, Doctor and Mrs. Flesher view the TV set given to Doctor Flesher in appreciation of his services to the people of Edmond. Lower photo, Mayor John Kessler presents keys to the new automobile, also a gift to Doctor Flesher.

L. Chester McHenry, M. D., O.S.M.A. President (extreme right) is shown presenting 50 Year Pins to J. C. Matheney, M.D., Benjamin W. Ralston, M.D., and J. W. Craig, M.D.

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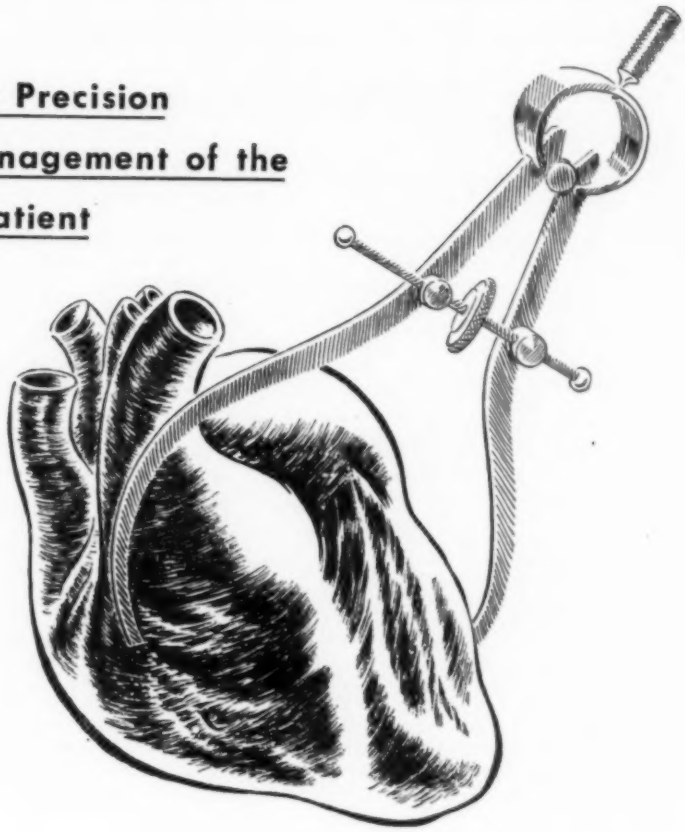

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PHYSICIANS-PHARMACISTS URGED TO READ SUMMARY OF NEW DURHAM-HUMPHREY BILL

Physicians and pharmacists should acquaint themselves with the provisions of the Durham-Humphrey bill enacted by the 81st Congress and pertaining to prescriptions.

The bill, having the joint sponsorship and backing of the American Medical Association, the American Pharmaceutical Association and the American Association of Retail Druggists, has been designed to clarify and strengthen the law previously governing this field.

The provisions of the act are now in effect and all prescriptions coming under the provisions of the law must be handled as outlined in the following digest of the bill:

THE NEW PRESCRIPTION REFILL LAW (Durham-Humphrey) A SUMMARY OF ITS PROVISIONS

1. Household remedy prescriptions (for preparations without the RX legend) may be refilled ad lib and *without approval* of prescriber, but with usual care of dispenser.
2. Oral prescriptions may be filled upon the oral order of the practitioner or his expressly authorized representative, provided the pharmacist promptly makes a record of the oral prescription. This applies to all types of prescriptions, except narcotics, which cannot be refilled and must be in writing.
3. Oral and written prescriptions for habit-forming drugs (except nacotics) RX legend drugs, and all dangerous drugs *may be refilled* if authority to do so is given on the prescription or orally by the prescriber or his expressly authorized representative and such oral refill must be promptly recorded by the pharmacist.

   All oral prescriptions and oral refills must be recorded by the pharmacist at once and such record should be like, and in the form of, a written prescription with all the necessary information in the record, such as date; doctor's name and address; the preparation sought ; the dosage; directions for use and any cautionary statement given by the prescriber; and the patient's name if given by the prescriber. This prescription or refill record must be in such form that an inspector, upon examining it, may find all the information necessary, just as in the case of a written prescription.

   In the case of an oral refill, the record should preferably be made on the back of the original prescription, giving the date of authorization to refill; the person authorizing the refill; and any change requested by the prescriber either in dosage —in directions for use if any, or any other directions given by the prescriber or his expressly authorized representative. This is especially true in cases where the original prescription was marked "N.R." and the prescriber decides upon a refill of such a prescription or a variation of the original prescription.
4. Great responsibility is placed upon the pharmacist to make certain that the oral prescription or the oral refill of dangerous and habit forming drugs is issued by the physicians or his expressly authorized representative.

   This law was passed to protect the public health as well as to eliminate, the prescription confusion. The Federal Drug Administrator will compel strict compliance with the law requiring authorization by the prescriber for oral prescriptions and oral refills. Especially in the case of habit forming drugs and other dangerous drugs, the pharmacist must make certain that the oral prescription or refill has been given by the prescriber or his expressly authorized representative.
5. All *habit-forming prescriptions* when refilled, must be labeled as follows:—
   (a) "Caution: May be habit forming," notice affixed.
   (b) The name and quantity or proportion of habit forming drug or its derivatives noted on label.
6. All *prescription drugs* must be labelled as follows:
   (a) Name and address of prescriber.
   (b) Serial number.
   (c) Directions for use and all cautionary statements noted as contained in the prescription.
   (d) Name of patient if given in prescription.
   (e) Name and address of druggist.
   (f) Date of prescription or its filling.
7. If original manufacturers' package of non-prescription drugs is broken and used in part by pharmacists, the use of the directions and all cautionary statements by the pharmacist, as it was contained on the original package, exempts pharmacists from liability for misbranding, if he acts in good faith.
8. The RX legend must be uniform on all prescriptions as follows:—"Caution: Federal law prohibits dispensing without prescription." However, any manufacturer who distributes a non-dangerous or non-prescription drug and affixes the RX legend to it, is guilty of misbranding.

D-H law becomes fully effective April 26, 1952, but pharmacists can start *Immediately* to use the two pluses which the law gave them: (1) Fill oral (telephoned) prescriptions. (2) Refill non-Rx drugs without MD authorization.

COOPERATE WITH YOUR PHARMACIST

Appearing elsewhere on this page is a digest of the Durham-Humphrey bill passed by the 81st Congress and dealing with the new federal law concerning the writing and re-filling of prescriptions. Physicians must realize their obligations to the pharmacists, particularly when it is realized that in some instances pharmacists are being asked by physicians, perhaps unknowningly, to violate the law. The Durham-Humphreys bill was passed by Congress after endorsement by the American Medical Association.

Take time to visit with the pharmacist you use so that you may understand his problem and thereby be in a position to cooperate with him.

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BOARD OF MEDICAL EXAMINERS HOLDS FALL MEETING

The Oklahoma State Board of Medical Examiners met during the meeting of the Oklahoma City Clinical Society for the consideration of disciplinary measures against several physicians. Eighteen physicians appeared before the Board for one reason or another and the licenses of the following physicians were either revoked or suspended:

Frank George Beard, Tulsa—Application for Reinstatement of License—Denied.

Joseph Walter Beyer, Tulsa—License revoked.

Nevin J. Diffenbach, Tulsa—Not eligible to practice. No current renewal certificate of registration.

Oscar Alvin Flanagan, Tulsa—License suspended for five years.

Luther Mace Lile, Hope, Ark.—License revoked.

Thomas Lafayette Robinson, Ponca City — License revoked by personal request.

Fred Somerville Watson, Okmulgee—License suspended one year.

The following physicians have recently been licensed to practice medicine:

Robert John Meyer, Minneapolis, Minn.
Betty Jane Bamforth, Oklahoma City.
Francis Alston Davis, Shawnee.
Ausey Hamilton Robnett, Tulsa.
Richard J. Schneble, Ponca City.
Frederick C. Wallingford, Bartlesville.
Phil White, Oklahoma City.
Richard Wyrick, Oklahoma City.
Wm. Stevenson Jacobs, Tulsa.
J. R. B. Branch, Oklahoma City.
Neumon Darrell Johnson, Tulsa.
Harold Wade Kinderman, McAlester.
Harlan Thomas, Tulsa.
John Hubert Sturges, Santa Rosa, Calif.
Elvin Miller Brother, Oklahoma City.
Wm. Archibald Betts, Tulsa.
Lawrence L. Spitzer, Marlow.
Robert I. Barickman, Jr., Tulsa.
Thomas David Burnett, Sapulpa.
Martin Leibovitz, Tulsa.
Paul C. Benton, Tulsa.
Robert Lee Currie, Sallisaw.
Merlin E. Jacobson, Oklahoma City.
Carl Kreiger, Jr., Oklahoma City.
Robert Leroy Ramsdell, Norman.
Julius Alfred LaCroix, Jr., Oklahoma City.
Nova Lemoine Morgan, Oklahoma City.
Alfred Max Schideler, Oklahoma City.
Woodrow Wilson Massad, Oklahoma City.
Billy Neil Gray, Oklahoma City.
Thomas Oran Hodges, Oklahoma City.
Howard Kenneth Ihrig, Oklahoma City.
Milleent Marrs Stream, Norman.
Theodore R. Wenger, Tecumseh.
Robert Alan Northrup, Tulsa.

The Journal will carry in its columns monthly actions by the Board concerning newly licensed physicians. Readers are reminded that the cities following the physicians' names are the ones in which they were residing at time of licensure.

CD CONFERENCES HELD

Upon the return of Allen Gibbs, M.D., and Milam F. McKinney, M.D., from the meeting in Chicago to study civilian defense, conferences were held with Mr. Glenn Poarch, newly appointed director of Civilian Defense for the State of Oklahoma. Purpose of the conferences was to begin planning for the development of the medical aspects of local civilian defense.

PRIORITY II MAY BE CALLED

Military Advisory Committee of the Association met Sunday, December 2, for the purpose of reviewing the availability of Oklahoma physicians who are members of the medical corps reserve of the army, navy and air forces, who may be called to duty shortly after January 1. It has been pointed out to this committee that unless there is a change in the Korean situation, Priority II physicians will probably be called sometime during 1952. The committee was also requested by Selective Service to review all deferred classifications that have been given doctors of medicine by local Selective Service boards.

STATE LEGISLATIVE COUNCIL CONSIDERS RECOMMENDATIONS

The state legislative council which considers all proposed legislation in the interim between meetings of the state legislature, discussed matters pertaining to public health and welfare at its meeting December 17.

Proposals coming before the committee included amendments to bring state laws concerning the control and use of narcotics by teenagers, also the feasibility of separating the mental health department from the Board of Affairs and the clarification and modernization of existing mental health laws.

STUDENT A. M. A. MEETS IN CHICAGO

Representatives of the University of Oklahoma School of Medicine attended the meeting of the Student American Medical Association held in Chicago December 27 and 28.

Playing a prominent part in the discussions of the Student A.M.A. was the internship matching plan which has received so much publicity in the field of hospital and medical school training programs. The University of Oklahoma chapter was prominent in the floor discussions with regard to the matching plan and took the position that this method of securing internships should be abolished.

CANCER SOCIETY MEETING

Physicians throughout the state are invited to attend the Annual Meeting of the Oklahoma Division of the American Cancer Society which will be held in the Skirvin Hotel, Oklahoma City, January 11 and 12. Members of the O.S.M.A. are especially cordially invited to the dinner session January 11.

PROMOTION SCHEME FAILS

Emphasizing "Before you donate, call the Better Business Bureau for Facts," Oklahoma City's BBB recently released the following:

Oklahoma City business men who received new $1.00 bills through the mail from the "Cancer Welfare Fund, Inc." will be interested to know that the promoters, Joseph L. Brandt and Sidney Greenberg, were sentenced to three and one-half and two and one-half years respectively for mail fraud. They mailed out a total of $17,000 in $1.00 bills, asking that they be returned with appropriate contributions. In 10 months the corporation collected $123,000.00, spent only $7,349.00 on cancer sufferers and owed $75,000.00 despite the sum collected.

OKLAHOMA REGION LABELED "CRITICAL DEFENSE AREA"

One part of Oklahoma, the Fort Sill, Lawton area (consisting of Comanche county) was one of the "critical defense areas" named by the President on November 7, 1951, as eligible for federal assistance in the construction and possible maintenance of defense housing and community facilities.

Community facilities are defined as "waterworks, sewers, sewage, garbage and refuse-disposal facilities, police and fire protection facilities, public sanitary facilities, hospitals and other places for the care of the sick, recreational facilities, streets and roads, and day-care centers."

In the case of construction of hospitals or other places for the care of the sick, application to the Hill-Burton funds must first be made and refused before assistance may be given under this law. The federal government may make loans or grants to public and nonprofit agencies if local communities are unable or unwilling to carry out their responsibilities. Under certain conditions, the federal government, through the surgeon general, public health service, might actually *operate* hospitals and other health facilities financed by federal funds.

4,000 PINTS OF BLOOD PER MONTH IS QUOTA

J. R. B. Branch, M.D., medical director of the Oklahoma Defense Blood Center, reports that if the response to the appeal for blood continues in the future as it has in the past few months, the quota of 4,000 pints per month can be reached. Doctor Branch gives the following history of the Oklahoma Defense Blood Center:

The Oklahoma Defense Blood Center was activated on October 22, 1951. At first, only one mobile unit was put into operation, and beginning on November 12, the second unit was put in the field. Visits have been made to Chickasha, Shawnee, Ada, Purcell, Holdenville, Pauls Valley, Verden, Guthrie, Duncan, Chandler, El Reno, Healdton, Ardmore, Norman, Okmulgee, Henryetta, and Stillwater, in addition to operations held in Oklahoma City and Tinker Field.

The response, both from the general public and the medical profession has been most gratifying, Doctor Branch reports. In October 770 pints of blood were shipped to Fort Worth for processing into plasma, and as of November 20, an additional 2,055 pints were shipped, giving a total to November 20 of 2,825 pints.

Letters have been written to the presidents of all county medical societies enlisting their support as follows: first, to approve and back the defense blood program; second, to interest wherever possible prospective donors allaying any possible apprehension and fears and stressing the urgency of the program; third, to provide medical coverage during the period of operation of the suit. From past experience, this cooperation seems definitely assured, according to Doctor Branch.

Beginning the first of the year, the new permanent center at 323 N. W. 10th will be open and used not only as a base of operation for the mobile units, but also as a center to receive donors who can be enlisted. The success of the program so far has been largely due to the recognition of the urgency of the need for blood for the Armed Forces, efficient organization through the field representative, Miss Marjorie Bunker, and the enthusiasm of the local Red Cross chapter volunteers, and the medical profession. Doctor Branch further praised the warm support given by the press, radio stations, and WKY-TV as being of inestimable value.

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FOR SALE: 14 bed hospital and clinic, southeastern part of state. County Seat town. Trade area 19 thousand. Write Key F, care of the Journal.

FOR SALE: 50 M.A. 96 KV heavy duty Aloe x-ray. Fluoroscope machine with table and synchronize traveling bucky. Complete with cassette, hangers and all darkroom equipment. In use three months. Warren Gibson, Phone 1003, Lindsey Memorial Hospital, Pauls Valley, Oklahoma.

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FOR SALE: Well established practice and well equipped office in Oklahoma City. Write Key D, care of the Journal.

FOR SALE: Large Cameron cautery; small cautery; small examining table, by widow of deceased physician. White Key S, care of the Journal.

ANNOUNCEMENTS

OKLAHOMA CITY OB.-GYN. SOCIETY meeting, January 19.

WASHINGTON'S BIRTHDAY CONFERENCE, Oklahoma City, February 22.

OKLAHOMA ACADEMY OF GENERAL PRACTICE, Tulsa Hotel, Tulsa, Oklahoma, March 17 and 18.

AMERICAN COLLEGE OF PHYSICIANS, Cleveland, Ohio, April 21-25.

OKLAHOMA STATE MEDICAL ASSOCIATION, Oklahoma City, Oklahoma, Municipal Auditorium, May 19-21.

CHICAGO MEDICAL SOCIETY CLINICAL CONFERENCE, Palmer House, Chicago, March 4, 5, 6, 7, 1952. Complete program will be mailed upon request. In response to popular demand, the 1952 program will show an increased number of demonstrations or workshop periods in addition to the regular series of lectures.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY announces the election of Dr. John L. Parks of Washington, D. C., as a member and Director of the Board. Doctor Parks succeeds Dr. Joseph L. Baer, who has been Vice President of the Board for over 20 years and who has resigned.

Applications must be received no later than January 2, 1952, for the competitive examination for appointment of medical officers to the regular corps of the United States Public Health Service. Examinations will be held at a number of points throughout the United States, February 5, 6, and 7, 1952.

OBITUARIES

VICTOR K. ALLEN, M.D.
1888-1951

V. K. Allen, M.D., past president of the Tulsa County Medical Society and Councilor from that district, died November 8 after an illness of only a few days.

Doctor Allen was born in Hope, Arkansas, and was graduated from Tulane university medical school. He later studied at St. John's medical school, London.

During World War I he spent two years in the medical corps, including several months in France. After returning from the service he began practice at LeCompte, La.

Doctor Allen was a member of the American and Midwest Proctological societies, American College of Surgeons and American and International Board of Surgeons and the Southwestern Surgical Congress. He was also a 32nd degree Mason and a member of the Pilgrim Masonic lodge, Akdar Shrine, First Presbyterian church, American Legion and Veterans of Foreign Wars. He was a member of the Board of governors and on the staff of Hillcrest hospital. He was also a member of the chamber of commerce and formerly belonged to the Downtown Kiwanis club.

Surviving are the widow of the home, a daughter and two sisters.

REPORT IS MADE ON HOME TOWN CARE PROGRAM

Figures recently released by the Veterans Administration show that out of 588 physicians participating in the Veterans Home Town Medical Care Program in the Oklahoma City region, 122 received payments for medical care rendered during October. Fees ranged from $3.00 to $652.50.

Payments made through the Muskogee Regional Offices showed that 149 physicians received fees from the VA in October with the lowest fee in that area $3.00 also. Highest fee in the Muskogee district was $457.00.

The agreement between the Oklahoma State Medical Association and the Veterans Administration for the home town medical care program was made four years ago with each member of the Association given an opportunity to participate.

GROVER C. MOORE, M.D.
1884-1951

Grover C. Moore, M.D., Ponca City resident for 22 years, died suddenly November 18.

Doctor Moore, whose specialty was eye, ear, nose and throat, was born September 17, 1884, at Hot Springs, Arkansas. He received his medical degree from the University of Arkansas School of Medicine in 1913. He served as flight surgeon during World War I and after the war, he studied for four years in New York. He then established his practice at Okmulgee and moved to Ponca City in 1929. He was active and in county and state medical societies and was also a member of the American Legion and Masonic lodge.

RAY HOLBROOK, M.D.
1870-1951

Ray Holbrook, M.D., pioneer Payne county physician, died at his home in Perkins November 17.

Doctor Holbrook was born in 1870 in Booneville, Ky. He studied in Lebanon, Ohio, and at Louisville University in Kentucky, and received his degree from St. Louis University. After graduation he started for California, stopped in Perkins, and never found time to finish his trip westward.

Doctor Holbrook was an honorary life member of the Perkins Masonic lodge, a 32nd degree Mason and was a member of the Indian Shrine at Oklahoma City.

Survivors include the widow of the home address, three sons and one daughter.

ATTEND INTERIM SESSION

Attending the mid-winter session of the A.M.A. in Los Angeles in December were the following representatives of the O.S.M.A.: James Stevenson, M.D., Tulsa; John F. Burton, M.D., Oklahoma City; L. C. McHenry, M.D., Oklahoma City; John McDonald, M.D., Tulsa; John Records, M.D., Oklahoma City; and John K. Hart, Associate Executive Secretary, Oklahoma City.

One of the highlights of the meeting was the appearance Wednesday evening, December 5, at the open meeting of the House of Delegates, of Ohio Republican Senator Robert A. Taft and Virginia Democrat Harry Byrd, who discussed the major national issues for 1952. It was a public meeting and a capacity crowd of 6,800 people were present. The discussion was carried by the ABC network.

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PAYS.. A Monthly Indemnity for total disability during first year, whether house confined or not, ...From First Day	$ 300.	$ 200.	$ 100.
PAYS.. Total Monthly Indemnity First 2 Years...	5400.	3600.	1800.
ACCIDENT BENEFITS			
PAYS.. A Monthly Indemnity for total disability during first year .....From First Day	300.	200.	100.
PAYS.. Total Monthly Indemnity First 2 Years...	5400.	3600.	1800.
PAYS.. Monthly Indemnity for partial disability up to 13 weeks .....From First Day	120.	80.	40.

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Annual	$138.00	$92.00	$46.00
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Monthly Hospital Indemnity may be added up to ..... for $6.00 per $100 .... Hospital Benefits payable for One to 90 days — Each disability.	$ 450.	$ 300.	$ 150.
Accidental Death and Dismemberment Indemnity up to.. Added for $2.00 per $1000.	7500.	5000.	2500.

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AMA REPRESENTATIVE REPORTS ON SURVEY

Lawrence Rember, field director of the public relationstions department of the American Medical Association, addressed members of the Public Policy Committee of the O.S.M.A. when the group met November 27.

Mr. Rember reported on the results of the survey taken in Decatur, Macon County, Illinois, concerning the public's attitude with regard to its opinion of physicians, hospitals, drug costs, etc. Because this survey was the first of its kind, its results have been viewed with interest. It is believed that the profession will be interested in the questions asked and the replies given. The following represents the results, giving the questions asked and the answers by per cent:

1. Do you have a family doctor?

Yes	91 per cent
No	9 per cent

2. Have you or any member of your family seen your family doctor within the past year?

Yes	89 per cent
No	11 per cent

3. Have you ever used a specialist?

Yes	75 per cent
No	25 per cent

4. Was the specialist recommended by your family doctor?

Yes	39 per cent
No.	36 per cent

5. Are you able to get your doctor (or a doctor) when you want him, regardless of whether it is nights, week days, Saturday or Sunday, or a holiday?

Yes	80 per cent
No	7 per cent
Sometimes	3 per cent
Dont know	10 per cent

6. How soon does your doctor respond?

Right away	54 per cent
Short delay	25 per cent
Long delay	7 per cent
Don't know	14 per cent

7. For services rendered, do you think you pay too much, too little, or about the right amount for home calls?

Too much	10 per cent
Too little	1 per cent
About right	77 per cent
Don't know	12 per cent

8. For services rendered, do you think you pay too much, too little, or about the right amount for office calls?

Too much	11 per cent
Too little	0
About right	85 per cent
Don't know	4 per cent

9. For services rendered, do you think you pay too much, too little, or about the right amount for surgery?

Too much	16 per cent
Too little	0
About right	40 per cent
Don't know	44 per cent

10. For services rendered, do you think you pay too much, too little, or about the right amount for hospital care?

Too much	36 per cent
Too little	1 per cent
About right	48 per cent
Don't know	15 per cent

11. For services rendered, do you think you pay too much, too little, or about the right amount for prescription drugs?

Too much	33 per cent
Too little	0 per cent
About right	44 per cent
Don't know	23 per cent

12. What do you think of the quality of medical care (that is, other than surgical care) that you are receiving in your community?

Excellent	38 per cent
Good	53 per cent
Fair	9 per cent
Poor	0

13. What do you think of the quality of the surgical care that you are receiving in your community?

Excellent	35 per cent
Good	26 per cent
Fair	5 per cent
Poor	2 per cent
Don't know	32 per cent

14. What do you think of the quality of hospital care that you are receiving in your community?

Excellent	19 per cent
Good	44 per cent
Fair	17 per cent
Poor	7 per cent
Don't know	13 per cent

15. What do you think of the quality of the nursing care that you are receiving in your community?

Excellent	19 per cent
Good	45 per cent
Fair	18 per cent
Poor	4 per cent
Don't know	14 per cent

16. Do you go out of town at all for medical care? If so, where, for what, and why?

Yes	28 per cent
No	71 per cent
No answer	1 per cent

17. Are the employes in your doctor's office courteous, discourteous, or in between?

Courteous	93 per cent
Discourteous	1 per cent
In between	3 per cent
Don't know	3 per cent

18. Are you taken care of in a reasonable or an unreasonable time in your doctor's office?

Reasonable	77 per cent
Unreasonable	22 per cent
No answer	1 per cent

19. Do you feel that your own doctor has a personal interest in you?

Yes	91 per cent
No	7 per cent
Don't know	2 per cent

20. Do you feel that Decatur (or Macon county) doctors in general are interested, moderately interested, or not interested in their patients as individuals and as people?

Interested	59 per cent
Moderately	26 per cent
Not interested	6 per cent
Don't know	9 per cent

21. Do you have voluntary prepaid health insurance?

Yes	81 per cent
No	19 per cent

22. If you are not covered by voluntary prepaid health insurance, do you know about such plans?

Yes	18 per cent
No	1 per cent

23. Are you satisfied or dissatisfied with the prepaid health insurance that you have?

Satisfied	64 per cent
Dissatisfied	12 per cent
Don't know	5 per cent

24. Do you think Decatur (or Macon count) doctors are very interested, moderately interested, or not interested in making their community a better place to live?

Very interested	58 per cent
Moderately	18 per cent
Not interested	5 per cent
Don't know	19 per cent

25. Do you like doctors as people?

Yes	91 per cent
No	6 per cent
Don't know	3 per cent

26. Would you like to change doctors as people?

Yes	27 per cent
No	67 per cent
Don't know	6 per cent

27. What is your opinion of the Macon County Medical Society? Is it favorable, unfavorable, or don't you have an opinion on it?

Favorable	40 per cent
Mixed	1 per cent
Unfavorable	4 per cent
Don't know	55 per cent

28. Are you familiar with any of the public services, or community services of the Macon County Medical Society?

Yes	35 per cent
No	64 per cent
No answer	1 per cent
No	18 per cent

29. Have you ever heard of the American Medical Association?

Yes	82 per cent

30. Do you think favorably or unfavorably of the A.M.A.?

Favorably	42 per cent
Neutral	2 per cent
Unfavorably	8 per cent
Don't know	48 per cent

OKLAHOMA IS SECOND IN SMA REGISTRATIONS

With the exception of Texas, the host state, registration of Oklahoma physicians at the Southern Medical Association Dallas meeting November 5-8, 1951, exceeded that of any other state represented. Ninety-three Oklahoma physicians were in attendance. Total registration was approximately 3,356.

According to the Daily Bulletins of the 45th Annual Session of the Southern, the following Oklahomans were registered:

V. K. Allen, Tulsa; Roy W. Anderson, Cordell; C. E. Bates, Oklahoma City; C. M. Bloss, Jr., Holdenville; Walter E. Brown, Jr., Tulsa; Coyne H. Campbell, Oklahoma City; Wylie G. Chestnut, Miami; N. E. Cobb, Mooreland; Matt A. Connell, Picher; Wm. Henry Cook, Chickasha; Keiffer D. Davis, Bartlesville; W. A. Dean, Tulsa; E. F. Deese, Ada; Joe L. Duer, Woodward; Safety R. First, Tulsa; O. J. Gee, Oklahoma City; R. K. Goddard, Jr., Skiatook; John M. Gowdy, Talihina; Onis Hazel, Oklahoma City; G. M. Hogaboom, Heavener; Dick H. Huff, Oklahoma City; Hugh G. Jeter, Oklahoma City; C. A. Johnson, Ardmore; Henry Laurens, Ada; Ian MacKenzie, Tulsa; Elias Margo, Oklahoma City; Jack C. Mileham, Chandler;

John B. Miles, Anadarko; Donald L. Mishler, Tulsa; Edward L. Moore, Tulsa; G. C. Moore, Ponca City; L. J. Moorman, Oklahoma City; Ben H. Nicholson, Oklahoma City; S. L. Neuman, McAlester; Herbert S. Orr, Tulsa; Reynold Patzer, Oklahoma City; Carroll M. Pounders, Oklahoma City; John W. Records, Oklahoma City; E. Norris Robertson, Oklahoma City; Homer A. Ruprecht, Tulsa; G. R. Russell, Tulsa; Robert O. Ryan, Norman; George Warren Scott, Tishomingo; Winfred A. Showman, Tulsa; Elbert H. Shuller, McAlester; Carl F. Simpson, Tulsa; Franklin D. Sinclair, Tulsa; Marcella R. Steel, Tulsa; Averill Stowell, Tulsa; C. Riley Strong, El Reno; C. B. Sullivan, Carnegie; Joseph J. Swan, Chickasha; A. W. Truman, Ardmore;

Harry H. Turner, Oklahoma City; Arnold H. Ungerman, Tulsa; H. F. Vandever, Enid; J. H. Veazey, Ardmore; Jesse R. Waltrip, Pauls Valley; W. K. West, Oklahoma City; Chas. Ed. White, Muskogee; Fred Woodson, Tulsa; Frank L. Wormington, Miami; C. Jack Young, Oklahoma City.

Charles P. Bondurant, Oklahoma City; J. S. Chalmers, Sand Springs; Carl R. Doering, Norman; Hugh J. Evans, Tulsa; F. L. Flack, Tulsa; G. E. Johnson, Ardmore; Joseph W. Kelso, Oklahoma City; Everett S. Lain, Oklahoma City; Fannie Lou Leney, Oklahoma City; Earl W. Mabry, Altus; Earl D. McBride, Oklahoma City; William G. McCreight, Oklahoma City; Samuel T. Moore, Oklahoma City; Robert J. Morgan, Oklahoma City; Kirk T. Mosley, Norman; R. L. Murdock, Oklahoma City; Hugh B. Nichols, Tulsa; Peter E. Russo, Oklahoma City; R. E. Sawyer, Durant;

Alfred T. Baker, Durant; Battey B. Coker, Durant; Jas. T. Colwick, Durant; Ross Lee Curtess, Jr., Oklahoma City; Chesley Para Erwin, Oklahoma City; Raymond C. Gentry, Bartlesville; Charles L. Johnson, Jr., Bartlesville; Joseph R. Karlick, Ardmore; and Ethel M. Walker, Ardmore.

Fifty-five wives from Oklahoma accompannied their husbands and attended the sessions of the Auxiliary of the S.M.A.

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